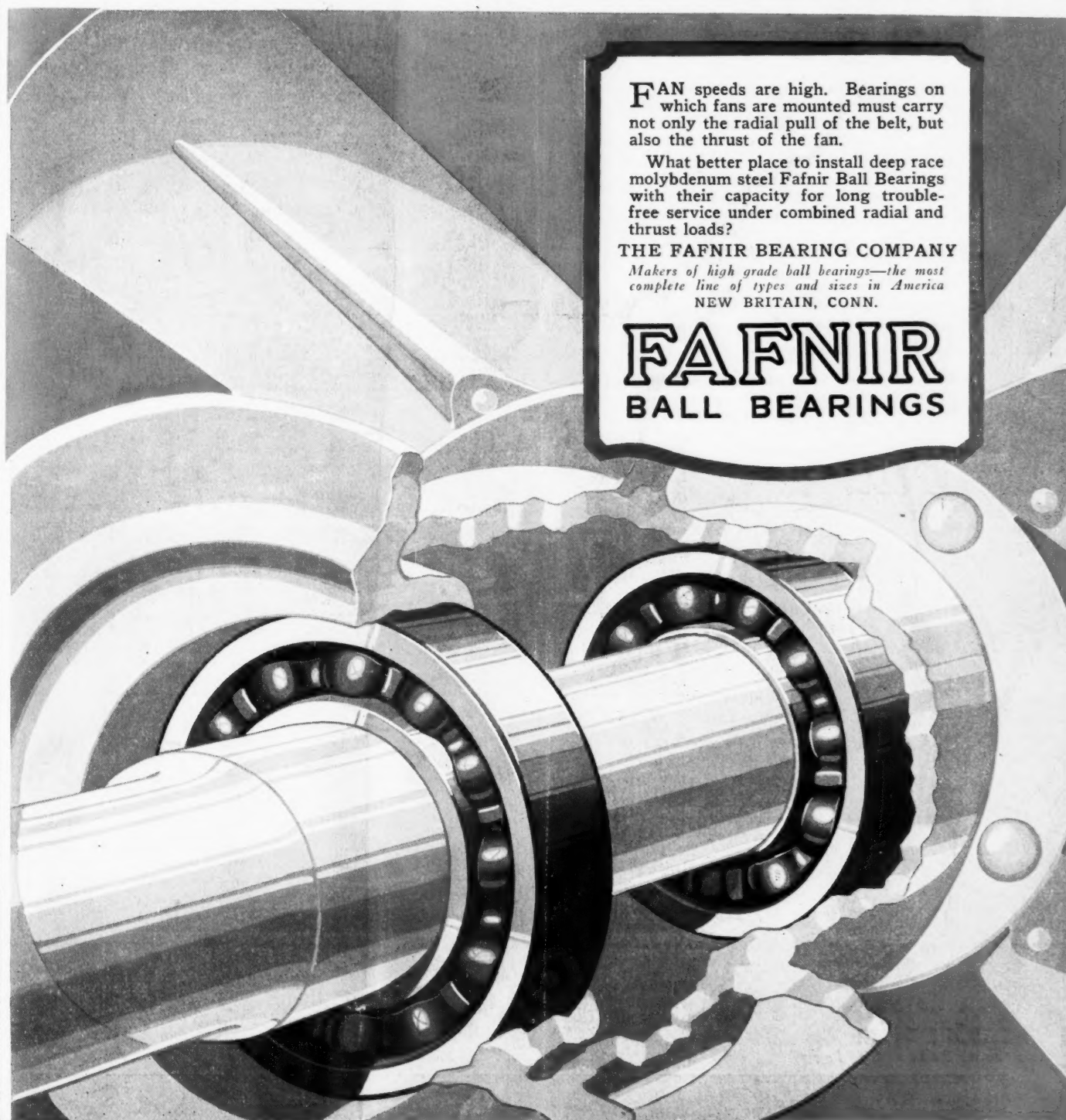


# AUTOMOTIVE INDUSTRIES

Volume 57  
Number 10

PUBLISHED WEEKLY AT CHESTNUT AND 56TH STREETS  
PHILADELPHIA, SEPTEMBER 3, 1927

35c a copy  
\$3.00 a year



**F**AN speeds are high. Bearings on which fans are mounted must carry not only the radial pull of the belt, but also the thrust of the fan.

What better place to install deep race molybdenum steel Fafnir Ball Bearings with their capacity for long trouble-free service under combined radial and thrust loads?

**THE FAFNIR BEARING COMPANY**

*Makers of high grade ball bearings—the most complete line of types and sizes in America*  
NEW BRITAIN, CONN.

## FAFNIR

**BALL BEARINGS**

*Waukesha built six-cylinder "Ricardo" Head Engines in "Twin Coach"*



a-718-LC

## From Coast to Coast

**Bus operators are more appreciative of new and advance developments than any other transportation group. This is proved by the reception accorded the "Twin Coach" designed by Frank R. Fageol, the father of the "Safety Coach." Boston Elevated Ry. in the East and North Coast Transportation Co. in Tacoma show the coast to coast interest. In between you find Shore Line Motor Coach of Gary, Ind., Safety Motor Coach Lines of Chicago, Milwaukee Electric Ry. and Lt. Co. and Twin City Rapid Transit.**

*That this Company should have been chosen by Frank R. Fageol, for the heavy duty six-cylinder engines used in the "Twin Coach," reflects his confidence in the Waukesha Motor Company's management, workmanship and engineering experience which have made the reputation now enjoyed by all their engines. A line stating for what you wish to use them will bring literature describing our very complete line of four and six-cylinder heavy duty engines.*

A-756-LC)

AUTOMOTIVE EQUIPMENT DIVISION

**WAUKESHA MOTOR COMPANY**  
**Waukesha Wisconsin**

Eastern Sales Offices

Eight W. 40th Street

New York City

*Exclusive Builders of Heavy Duty Automotive Type Engines for Over Twenty Years*



## Signs Point to Strong Car Market for Remainder of Year

*Automotive sales are increasing as bumper grain and fruit crops are harvested and cotton price goes up.  
New Ford awaited to release pending orders.*

By Norman G. Shidle

LABOR DAY. Vacation periods over. New models getting into full production. The automotive industry and its executives back on full time. "How do things look for the rest of the year?" returned automotive vacationists are asking each other as they meet again in the factories and at club luncheon tables. Some are optimistic; others are cautious; a few predict a fairly quiet last quarter. But everybody is set for plenty of work and determined to make the last four months of 1927 as successful as is humanly possible from an automotive standpoint.

The facts about business prospects which spread themselves before the industry as it turns back to its desk after Labor Day are full of cheering signs and furnish strong support for a conservative but definite optimism, despite the existence of some soft spots to mar the generally fair picture. The general business outlook is favorable. A brief, authoritative summary of how things stand is given by *United Business Service* in the following words:

"The current seasonal decline in business and

industry is close to the low for the year. Indications point to gradual improvement during early September, followed by a recovery later in the fall that will fully equal last year. Investment buying continues strong in high grade bonds and well-seasoned stocks."

And rising out of this favorable background of general economic conditions, special telegraphic reports to *Automotive Industries* regarding automotive conditions show a strong preponderance of favorable over unfavorable factors.

One of the most encouraging factors as regards fall automotive sales is the relatively good condition and prospects in numerous rural and agricultural districts at this time. From areas so scattered as Seattle, Atlanta and Dallas come similarly favorable reports as regards farm conditions.

In Georgia, for instance, the outlook for fall trade in the automotive field is said to be better than it has been for three or four years past, especially in the smaller communities on account of the fact that cotton has now reached the highest price in over two years, averag-

SOME of the specific facts developed by the accompanying survey of automotive market condition are:

Most of the new models already announced are going well and have stimulated both sales and inquiries.

Used car stocks throughout the country are in better condition than they have been for some time.

Used car sales are fair in most areas and slow in relatively few.

Truck sales have been almost uniformly good throughout the country in the last 30 days and bid fair to continue so.

New car sales are fairly good for this time of year, although the continued uncertainty about what Ford is to announce and exactly when he will announce it continues to hold back sales to some extent, particularly in some low-priced car lines.

New car stocks are fairly heavy, but not unwieldy.

In only two or three areas are there definite signs of business decline of more than normally seasonal character.

ing around 22 cents a pound. "This represents an increase of seven cents per pound since spring," the Georgia report continues, "and adds over \$350,000,000 to the value of a minimum yield of 10,000,000 bales, which is a conservative estimate since the Government figures that the crop will be around 12,000,000 bales. Since other important crops in the area have increased in something like the same ratio, the purchasing power of the South has reached the highest level it has attained in the last five or six years."

#### Crop Prospects Good

"Crop prospects are bright in South Dakota and Montana," another reports says, "both of which States have been having poor crops because of aridity. Small grains and potatoes in the Ninth Federal Reserve District are expected to yield \$440,000,000, the rather high figure reached in 1924. Shipments of agricultural implements and vehicles show a good increase in the last month in the district. Business in general is about on a par with that of a year ago."

Further evidence of the improvement due to better cotton prices is provided in a report from Texas which says that "Reported improvement in cotton crop conditions and heavy increase in prices has produced more optimistic feelings in automotive circles in Texas, parts of Oklahoma, Arkansas, Louisiana, New Mexico and Arizona. Farmers, bankers, merchants, and industrial and professional men believe that more money will be in circulation during the remainder of 1927 than during the same months of any recent year. Most lines of business showed some improvement during August and the year passed into the ninth month with bright prospects for automotive dealers. Actual new car sales were some 5 per cent better than in July."

#### Used Car Situation

Undoubtedly the almost uniformly favorable reports about used car stocks and sales are the outstanding optimistic note of the present situation. While none of the dealers are heralding the passing of the used car problem, there seems to be a more or less concerted effort in all parts of the country to use better methods and to lick the trouble by strenuous individual effort. Kansas City, for example, reports the used car situation as "the best in years for this time of the season." Used car stocks in Cincinnati are said to be light; dealers throughout Michigan are trying hard to reduce stocks by special sales; stocks are reported low in Minneapolis; sales are fair in Boston; Dallas reports used car sales to be fair, despite rather heavy stocks. A few areas, such as Los Angeles, San Francisco and Dallas, report some unfavorable elements in the used car situation as compared to July, but the indications are that this group is in a minority.

Generally speaking, the dealers of the country seem to be optimistic about sales prospects for the next four months. Factory passenger car production, speeded up to supply new models, made

good gains in August over the July total of about 242,000. While accurate August totals aren't available yet, it would not be surprising if output for that month went over 265,000 despite the fact that Ford production for the month has been practically negligible. With Ford out of the picture for the moment, August, 1927, totals will, of course, be far, far under the 393,000 passenger cars built in August, 1926. The progress made by many companies has been steady throughout the year, however, total production of N.A.C.C. factories for the first seven months of 1927 having been ahead of the same period in 1926, despite the fact that output for the industry as a whole during that time was about 13 per cent less than that of 1926. Until Ford gets back into production, of course, the total output figures of the industry mean little as indices of the degree of prosperity that is being experienced.

Naturally, the general conditions outlined in previous paragraphs are not uniform throughout the country, varying degrees of activity being experienced in different areas as well as in different makes of cars and trucks. The detailed reports which follow from key cities throughout the country, however, give a good picture of what these variations are and how prospects for the fall selling season shape up in different places.

#### Boston

Sales conditions in the Boston territory for August averaged fair. With the new car announcements out of the way, those who had been waiting had a chance to make up their minds, and the salesmen were able to close up orders. Revision of prices downward on a few of the large production units tended to increase sales also.

In the outside districts there were signs of better sales. A few distributors now are showing increases over the first eight months of 1926, but the percentage is 10 to 20 per cent. No one expects now any return this year of 50 or 75 per cent jumps, so they are working hard to make the year show better than just an even break with last year. Used cars have been moving fairly well. Truck sales have been somewhat slow.

#### Atlanta

Due to a steady improvement in general business conditions in this district the past month, and an easing of the financial situation occasioned by the high prices prevailing for most of the important southern crops, automotive sales have shown a decided turn for the better. Most dealers and distributors, as a result, enjoyed a good increase in sales in August this year as compared with August, 1926. Particularly was this true of the Chevrolet and cars in the medium-price class, though distributors and dealers handling higher priced cars also reported a good gain in their sales volume during August over last year.

As regards the outlook, it is the best for fall trade in the automotive field in some three or four



years, especially in the smaller communities, on account of the fact that cotton has now reached the highest price in over two years, averaging around 22 cents per pound.

Truck sales in August showed a good gain over the same month last year and to date this year are well in excess of 1926, with the outlook giving promise that there will be no let-up in motor truck sales during the fall period.

### *Cleveland*

Conditions in Cleveland and vicinity for August are about the same as in July. A possible shrinkage has been detected in August sales compared to July, both in new and used car and accessories sales. September is not expected to bring any increase and it is predicted that a new low might be reached. The increase though of current months against those of 1926 is still maintained. With the passing of September brisk conditions are expected. Airplane progress has been noted in Cleveland in sympathy with the impetus throughout the country. Several large contracts are being filled now.

### *Cincinnati*

In spite of a general decrease in motor car sales in August, the month's total, as revealed by registrations in the County Clerk's office, presents a much brighter picture than heretofore. Up to and including Aug. 25, registrations show a decrease of only 10 per cent compared with the first 25 days in August, 1926, as against a decrease of 14 per cent for the full month of July compared with last year.

Registrations Aug. 1 to 25 inclusive were 1185, and sales during the last six days probably will be approximately 75 cars, which would bring the total to 1260. The splendid showing this month is due, of course, to the new models, a half-dozen of the more popular lines chalking up sales which offset the slump in a majority of the 41 types which figure in the month's registrations.

General business is good, though a cold rainy summer has hurt department stores. Financial conditions are sound and optimism prevails in the banking district. That a prosperous fall and winter is assured the automotive industry is the consensus of dealers.

Total sales this month will be about 100 cars behind July. New car inventories show an increase but this is in preparation for fall business. Used car stocks are comparatively light and the used car business for August will fall but few short of the July volume. Dealers have tightened up on trade-ins with the idea of having floors cleared as nearly as possible when fall trade starts next month.

### *Detroit*

Indications are that passenger car sales in Michigan will be very satisfying for August. While

sales in the State so far this year have been running considerably behind last year, indications are that the August volume, exclusive of Ford, will compare very favorably with August of 1926.

Dealers in all lines throughout the State, while reporting a good demand for cars, state that the prolonged delay in introducing the new Ford car has tended to slow up sales. The feeling is, however, that as soon as the new Ford makes its appearance the demand in all lines will be increased.

Wayne County, which includes Greater Detroit and which is regarded as an excellent barometer, shows new car registrations totaling 4126 for the first 23 days of the month, according to figures compiled by the Detroit Automobile Dealers Association. At this rate passenger car sales for August will approximate 5000 units compared with 7266 for August last year. The fact that only 37 Fords were registered during the 23 days would indicate that sales of other lines is again near normal.

Commercial car sales figures are likewise affected by the Ford situation. One thing which has been apparent during the past few weeks is that many dealers have been spending much effort in reducing used car stocks by staging special sales. Used car stocks on the whole, however, are not reported as excessive and the movement is just one of good business judgment on the part of dealers.

### *Milwaukee*

Passenger car business has undergone further stimulation by the announcement of new models by leading makers, although numerically sales continue to fall below a year ago because of the absence of Ford business. July sales were 7821, compared with 10,842 in the same month last year, but the decline is accounted for largely by the fact that Ford sales dropped from 5106 in 1926 to 795 this year.

Last year August sales in the State of Wisconsin were 7211 and it is believed certain that this mark has been exceeded by at least a slight margin this year, for business has picked up measurably since the middle of July and continues to improve steadily. In the low-priced car field, the demand still awaits the Ford announcement, but otherwise no adverse effect is noticeable. General business conditions in Milwaukee are consistently tending upward, and the State as a whole is in a fairly prosperous situation.

Rural sales are hardly up to the average, probably owing to the expectancy concerning the new Ford. Prospects for September are considered relatively excellent, and the prospect for the remainder of the year is promising, in the view of leading distributors and dealers.

### *Minneapolis*

The automobile business is getting into its stride again in the Northwest. Dealers universally report gaining trade and are optimistic as to prospects for the fall and spring. Some distributing houses report they cannot give dealers in standard lines as

report they cannot give dealers in standard lines as many cars as are asked for. The best business continues to be in the medium price cars.

Used car inventories are low, one reason being that the business in trade-ins has been lighter than usual. Useless cars are being wrecked by a dealers' wrecking plant.

Crop prospects are bright in two States which have been having poor crops because of aridity—South Dakota and Montana. Small grains and potatoes in the Ninth Federal District are expected to yield \$440,000,000, the figure reached in 1924. Shipments of agricultural implements and vehicles show a good increase in the last month in the district. Business in general is about on the par of a year ago.

### *St. Louis*

Retail automobile sales in this district are still slow. Automobile men look for little betterment until the new Ford is out. Prospective buyers of all lines of automobiles refuse to buy until they see what the new Ford is going to be like.

Sales in St. Louis and St. Louis County for the first six months of the year were only 5.25 per cent lower than sales for the corresponding months of 1926.

Truck sales are better in proportion than are passenger car sales. Trucks are selling at about a normal rate.

### *Kansas City*

Across the front of Ford dealers' salesrooms in Kansas City big signs are being displayed, reading: "Wait for the new Ford car."

And that about sums up the situation for August in the low-priced car field. The public apparently is waiting to see what the new Ford models are like before buying light cars.

Outside of the light class field the situation for the month has been very encouraging. Several companies report substantial gains over July and some have marked up new records for the year.

The used car situation in Kansas City probably is the best in years for this time of the season. Virtually all dealers have cleaned up well on used cars and stocks generally are low. Truck sales also have held up well.

The general situation in the Middle West is not as good as a month ago, due to excessive rains and flood conditions in Kansas and Oklahoma. However, the motor car dealers are very optimistic as to the outlook for fall.

### *Dallas*

Reported improvement in cotton crop conditions and heavy increase in prices of the staple produced more optimistic feelings in automotive circles in Texas and parts of Oklahoma, Arkansas, Louisiana, New Mexico and Arizona during August.

Actual new car sales in August were some 5 per cent better than in July. The trade is being hampered considerably by uncertainty regarding the new Ford car. Ford sales are at low levels. Business in rural districts is expected to show decided increase during September and October.

Used car sales in August were about the same as in July. Buying trend in rural districts has improved.

Accessory, equipment and parts sales are slightly above July with the outlook better.

Total business in Texas, Oklahoma, Louisiana, New Mexico and Arizona for the first eight months of the year has been slightly under the same period for last year. Dealers are inclined to believe total business for the year will be as great as that of 1926.

Truck sales for August were about the same as for July. Business is some better in rural districts. Most deals are replacements or involve trades.

New car stocks are normal; used car stocks heavy. Retailers are not carrying heavy stocks of accessories and tires.

### *New Orleans*

A check of the automotive situation in New Orleans at the present time shows a steady, though gradual, improvement in the industry as a whole. This is due to the rehabilitation work in the flooded areas of the State. It is believed that there will be a decided improvement when actual compensation checks are awarded to flood sufferers.

Dealers have at last worked down their used car stocks and this phase of the industry is in better condition here than at any previous time. New models of cars have been taken exceptionally well by the public. There seems to be a general slackening of sales in cars having a price range from \$600 to \$900, due undoubtedly to the anticipation of Ford's new product.

In all departments of the accessory industry business is slightly below the same period of last year, but shows improvement over last month. This condition is due to the fact that many roads in the State have been impassable on account of flood waters. These roads are now being rapidly put into condition again, and it is believed that the next 30 days will find almost all highways in the condition they were in before the flood.

The sale of the lighter type of trucks has shown a proportionate gain in sales over the heavier type due to the greater facility with which they get about in traffic.

Optimism is expressed in business circles.

### *Denver*

On the whole, August has been a satisfactory month in auto and accessory business in this territory. Taking into account that there has been no Ford business, the general volume is somewhat ahead of the same month last year, and slightly in advance of July, 1927. The fore part of the month was quiet, but with the beginning of the harvest the country orders have brought the general level up to the point indicated.

Middle class cars are about the same as July, and high price cars somewhat slower. Trucks are draggy, particularly heavy trucks, with some activity noticed in light farm trucks as the harvest progresses and beet harvesting comes into sight.

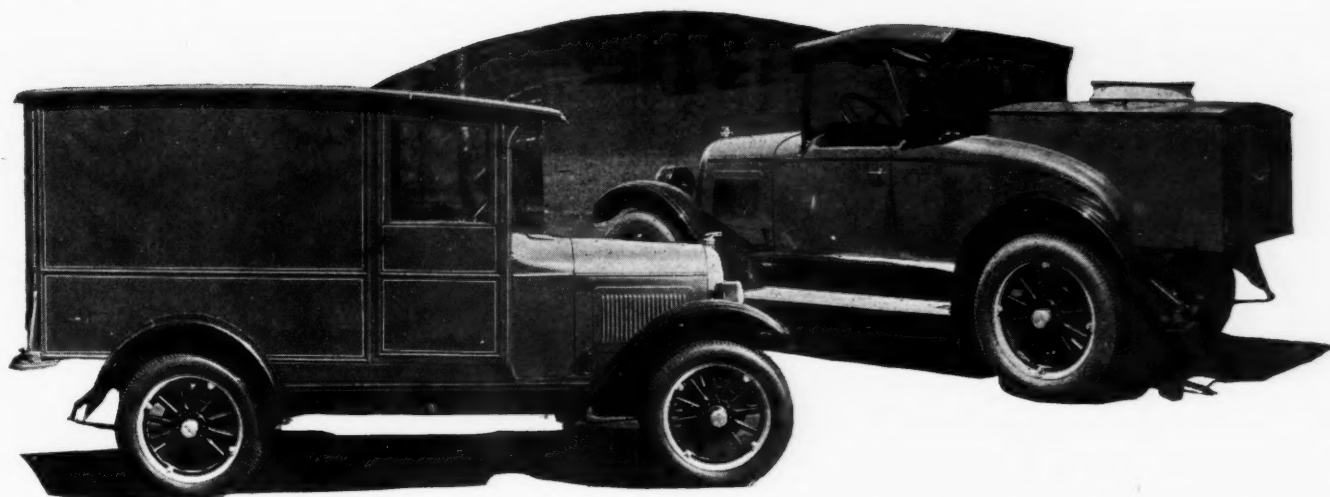
The best business in the State seems to be in that part which was not touched by the extremely severe hail of a few weeks ago, in particular around Fort Collins and Loveland. The hailed territory for 30 miles around Greeley is coming out better than was expected with the exception of small grain, which was a total loss.

### *San Francisco*

San Francisco distributors and dealers estimate passenger car sales for August in northern and central California are about 15 per cent better than those of same month last year and 10 per cent better than July this year. Market is very slow on used cars except for

(Continued on page 359)





*Whippet de luxe panel delivery truck and the commercial roadster with closed panel pick-up body*

## Whippet Enters Light Commercial Car Field

Four delivery bodies and three bodies of package type for commercial roadster announced at prices ranging from \$625 to \$710. Standard chassis used.

**W**ILLYS-OVERLAND, INC., has announced the entry of the Whippet into the light commercial car field with four types of commercial bodies and three bodies for the commercial roadster. The standard Whippet chassis is used.

The four commercial body types consist of a panel delivery body, an open express body, a canopy top express body and a canopy top express body with screens. The rated load capacity of all these types is 700 lb.

The panel body lists at \$685, the express at \$665, the canopy top express at \$670 and the canopy top express with screens at \$710.

The body construction employed is in line with the latest developments in the commercial body field. Steel forged braces are used at all connecting points of the bodies where strength and rigidity are important factors. The panels are formed of three-ply wood and coated with water-proof glue to which is cemented rust-proof coverings to increase strength and eliminate noise. Where the wooden frames are exposed they are covered with metal for protection.

### Adjustable Driver's Seat

Standard equipment on these bodies includes a single driver's seat which is fully upholstered and of the folding adjustable type. An additional seat can be installed where a helper beside the driver is considered necessary. The bodies can be furnished without doors to the front compartment. Dura regulators are provided for the door windows while the one-piece windshield is of the full vision type and is equipped with rubber stuffing to keep out moisture and drafts.

The two rear doors of the panel delivery body are 45 in. high and are fitted with a rotary lock which draws the doors closely together and at the same time operates two vertical rods which secure them firmly at the

top and bottom. The sides of the interior are fitted with hard wood slats and the floor is protected with metal runners to guard against damage when handling heavy loads.

The bodies have a curved roof which is extended in front to form a visor over the windshield. A continuation of the hood beading around the entire body gives a belt effect and enhances the appearance. Bumperettes are fitted to the rear. Dimensions of the bodies are: length 62 in., width 43¼ in., height 48 in.

### Three Roadster Bodies

The three bodies for the commercial roadster are a sample compartment type listing at \$625, an open pick-up type at \$645 and a closed panel type at \$665. The first type can be quickly and easily converted into either of the other types of delivery cars with slip-on bodies by simply removing the quick release cover of the sample compartment.

The front compartment of these cars is upholstered in Spanish leather. An Appenine blue lacquer with contrasting striping has been adopted for the color of the three cars. The bottom of these bodies is formed of 20 gage auto-body steel which is also used to form the panels on the closed panel body. The frames are of maple and ash, and are screwed, bolted and glued together.

Inside dimensions of the slip-on body are 56 in. long by 38 in. wide with flare boards 8 in. wide. The closed panel body has interior dimensions of 44⅞ in. long, 39⅞ in. wide, and 24 in. high at the center. Spare tires are carried so as not to interfere with access to the bodies. Equipment on all these commercial bodies is about the same as that supplied with regular touring models and includes the usual array of instruments, tools and accessories.



Photograph from "Flight" (London)

*Two of the three types of seaplanes built to represent England in the Schneider Cup race. In the foreground is the Gloster-Napier IV biplane, in the rear the Supermarine-Napier S5 monoplane*

## *New British Seaplanes Ready for Schneider Cup Race*

*Supermarine-Napier monoplane and Gloster-Napier biplane are given official inspection. Both fitted with Napier-Lion airplane engines. Great speed expected.*

By M. W. Bourdon

THE first official inspection of the Royal Air Force high-speed machines, which, it is hoped, will win back for Great Britain, at Venice, on Sept. 25, the Schneider International Seaplane Cup, took place recently, when two of the three types were seen. These were the Supermarine-Napier S5 monoplane and the Gloster-Napier IV biplane, the engine in each case being a racing (supercharged) version of the well-known Napier-Lion airplane engine.

In British aircraft circles there is general satisfaction that at last the British effort to regain this blue riband of the air is being undertaken from first to last as a Service exercise. All the pilots are members of the Royal Air Force and have been training for several months to fly high-speed seaplanes round triangular courses such as that laid down for the race.

A party of 27 R.A.F. mechanics, with special technical representatives of the firms concerned, are to attend to these highly tuned racing aircraft, and H. M. Aircraft Carrier "Eagle" will be stationed at Venice with four British destroyers for the period of the race, which lasts over two days, the first day being devoted to trials of navigability and seaworthiness, and the second to the race itself.

The monoplane is a low-wing type developed from the S4, which holds the British seaplane and land plane record of 226.7 m.p.h.; but that development has gone a long way. The fuselage is smaller, it is believed, in cross-sectional area than any fuselage yet designed, and has in effect been more or less dictated

by the size of the pilots. The area of the cross-section at its maximum is only just over half that of the S4, and as the Italians, who are again pinning their faith to the monoplane, have a larger engine in the Fiat, it is difficult to believe that they can produce a fuselage with a lower head resistance than that of the Supermarine-Napier S5.

The three blocks of the 12-cylinder Napier-Lion engine melt into the general lines of the fuselage, the cylinder block covers being, in effect, the cowling itself at that point; the pilot's cockpit, with a tunnel-type wind-screen, follows in a perfect stream-line with the fairing of the center block of four cylinders. Tank space in the body has been saved by putting the gasoline supply into the starboard float, this side of the machine being chosen in order to balance in part the torque of the airscrew.

### Wing is Radiator

Actually the perfectly smooth wing surface of the S5 is largely radiator, with a flat outer surface, thus cooling the engine water without in any way adding to the skin friction of the wing itself. A flat surface oil cooler runs along both sides of the fuselage.

The whole of the fuselage is of metal, the thin skin being built up of riveted plates and there is a perfectly smooth surface from nose to tail, along which the air can flow with the minimum of disturbance. The usual difficulty with a monoplane of insuring absolute rigidity of the wings has been effectively



overcome by the use of bracing wires running from the wooden wings to the top of the fuselage and to the floats, which are cross-braced to tie the whole structure into a unit of exceptional rigidity. The floats, of duralumin, convey, perhaps, the most impressive idea of the smallness of the monoplane, for, viewed from the side, they appear almost as large as the fuselage itself. Actually each float is about two-thirds the size of the body, buoyancy requirements dictating such an apparently disproportionate ratio.

The Gloster-Napier IV is the latest of the long series of racing aircraft designed by H. P. Folland. One of the earlier types Gloster III reached 200 m.p.h. in the 1925 Schneider race, and last year was improved to give in home trials 232 m.p.h. Here, again, notable advance have been made in stream-lining and wing fairing, while external bracing has been reduced to a minimum. Removable gasoline tanks are carried in the fuselage, and the oil tank and cooler

have been incorporated in the perfect stream-lining of the nose of the machine.

The cooling water is carried in a long header tank which forms the continuation of the fairing of the center cylinder block of the engine and leads on to the tunnel wind-screen of the pilot's cockpit. The wing radiators are of the corrugated type, and form an integral part of the wing, while in order to provide against all contingencies, additional skin radiators of the same type form part of the top surface of the floats.

The constructional work of the Gloster fuselage is of the mixed wood and metal type, and the thin section wings are constructed on the multispar principle. Every external control has been eliminated, and both elevator and rudder controls are fitted with a variable control device for increasing and decreasing the movement of the control surfaces in relation to that of the control column. The outward sloping interplane struts are built up of duralumin forgings

---

## The American Schneider Cup Entry

**B**ELOW is the racing seaplane designed and built for Lieut. Alford J. Williams by the Kirkham Products Co., Garden City, Long Island. It carries the largest engine ever installed in a single-engined plane. The small size of the biplane, together with the great power of the engine, is relied upon to capture the world's speed record for aircraft of this type for the United States. The plane after speed tests here will be sent to Italy for entry in the Schneider Cup races. C. V. Kirkham, formerly with the plane division of the Curtiss Aeroplane & Motor Co., is president of the company bearing his name. Some of the characteristic features of Curtiss racing planes are in evidence in the present craft.

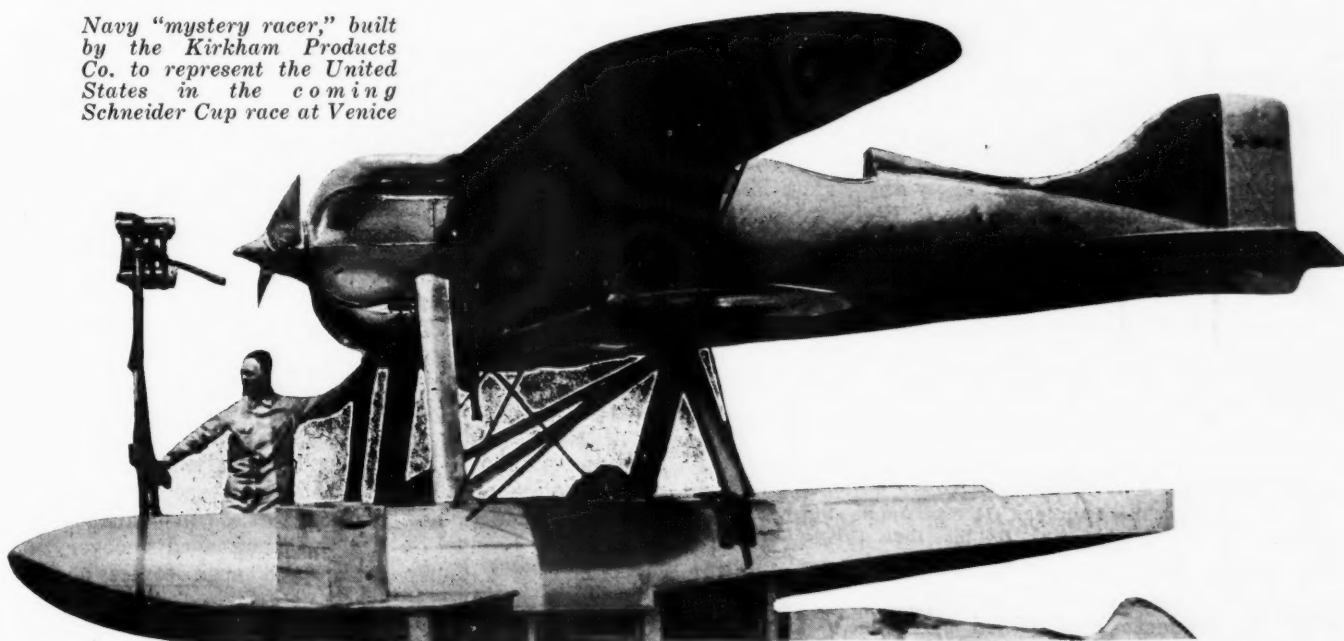
The engine is a Packard "X," the new type recently developed by the Packard Motor Car Co. Representing

a departure from precedent in the design of airplane engines by Packard, the cylinders are arranged in the form of an X, with six cylinders in a bank making a total of 24. It develops 1200 hp. The power plant is thus powerful but compact. It is water-cooled and drives the propeller direct.

The Navy "mystery racer," as it is being called just now, is a single-seater biplane employing a monocoque plywood fuselage with the top wing setting flush with the top of the fuselage. This design, in addition to providing maximum visibility for the pilot, makes for a better streamlining at the point of attaching the wings to the fuselage.

The lower wing, being much shorter, is separated from the upper by a single pair of I-shaped struts, the whole being braced with streamline wires.

*Navy "mystery racer," built by the Kirkham Products Co. to represent the United States in the coming Schneider Cup race at Venice*



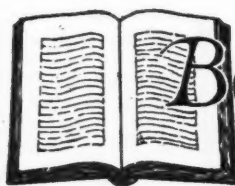
to reduce further the frontal area, and the metal airscrew has detachable blades which enable them to be machined to their correct pitch and contour from a solid duralumin forging.

Details of the Napier Lion racing engine may not be mentioned. All that can be said is that the frontal area has been reduced by rearrangement of certain details, and that, as the racing Napier Lion in 1925 gave 700 hp., and development has been continuous ever since, the horsepower shows a substantial increase. One new feature of value is the inclusion of a special reduction gear, the effect of which is to enable a slower-running airscrew to be used. This is said to be the first time that a high-powered geared racing engine has been produced.

Six machines in all are being sent to Venice, three

being Supermarine-Napier S5 monoplanes and two being Gloster-Napier IV biplanes. The sixth machine is the Short-Bristol "Crusader," a monoplane, embodying a radial air-cooled racing engine. No decision as to which of the six shall form the final team of three has been made, or will be made, until experience has been gained of actual flying under Italian climatic conditions, and all the factors making for success have been properly gaged.

Air Vice-Marshal Scarlett, who will be in charge, will have an advisory committee with him, consisting of two representatives of the Royal Aero Club (Lieutenant-Colonel Mervyn O'Gorman and Lieutenant-Commander H. Perrin), Major J. S. Buchanan, of the Technical Department of the Air Ministry, together with representatives of the aircraft and engine firms.



## Books for the Business Bookshelf

### *Critical Speeds of Crankshafts*

A METHOD of experimentally determining the critical speeds and the stresses in the crankshafts of airplane and similar engines is suggested in Report No. 1045 of the (British) Aeronautical Research Committee entitled "On the Equivalence between the Dynamic System of a Multi-Crank Flywheel System and a Certain Electrical Circuit, with Suggestions for Measuring Critical Speeds and Shaft Stresses by Analogy," the author being E. B. Moullin. If the equivalent inertia of the rotating masses and the equivalent stiffness of the portions of the shaft can be stated, the critical frequency can be calculated, but the calculation can be avoided by devising an electrical circuit equivalent to the dynamical system, and in the report referred to Mr. Moullin shows how this can be done. An extension of the method has been proposed to include the case of variable inertia, and also the case of a couple acting on each crank. Suggestions for suitable values of the moments of inertia of the system are also given in the report.

### *Distillation Products of Coal*

A COPY has been received of a report on Distillation Products of Coal made by the Prime Movers Committee of the National Electric Light Association. It deals with low temperature carbonization processes and with the hydrogenation and liquefaction of coal, giving a review of the work done to date in these fields. It also contains a very extensive bibliography on the subject of liquid fuels from coal. The report is published by the National Electric Light Association, 29 West 39th Street, New York.

### *Automobile Painting*

Modern Automobile Painting. Marvin James Pearce. David McKay Co., Philadelphia, Pa. 296 pp. Illus. \$3.

THIS is one of the first books to be published on the subject of automobile painting since the use of cellulose products has gained such wide popularity, so that it should be of considerable interest to those interested in modern painting methods. The author

describes the various types of finishes now being employed, and these include paints and varnishes as well as lacquers, and gives fairly detailed instructions as to how the entire finishing job may well be handled.

### *Guide for Treasurers*

Corporation Treasurer's and Controller's Guide. William H. Crow. Prentice-Hall, Inc., New York. 1657 pp. Illus. \$15.

THERE may be problems or subjects confronting the financial officers of a corporation which are not covered in considerable detail in this very comprehensive book, but it is hard to imagine such a thing being possible. In some 1500 pages of text illustrated with nearly 600 charts, diagrams and forms, the author has apparently provided the necessary information to show how some companies are meeting every possible problem in financial matters.

To a considerable extent the book is a compilation of methods employed by countless well-known concerns so that it may well be considered authoritative. It provides information for small corporations as well as for large ones. Not the least item of value in the book is an index covering some 200 pages by means of which any item of information is immediately made available to the reader.

### *Oil Recovery*

A COPY has been received of a pamphlet entitled "The A B C's of Science in Oil Recovery," by Hugh S. Taylor, Professor of Physical Chemistry in Princeton University. The pamphlet is published by the American Petroleum Institute, 250 Park Avenue, New York. It is the first of a series of papers which will be prepared from time to time and published by the Institute for the general information of the industry and the public. The articles will deal with the theory and practice of oil production, with special reference to the conservation of gas, and to the consequent better control of production and the increased recovery of oil. The first paper deals with such topics as the states of matter, solubility of solids and gases, and the surface tension of liquids, and the application of the principles discussed to the recovery of oil from the underground reserves.



## Just Among Ourselves

### Advice for Back-Seat Airplane Drivers

A LITTLE bulletin advertising an aerial tour over Detroit has just come to hand from Stout Air Services, Inc. On the reverse side the leaflet has ten commandments on how to get maximum enjoyment out of your flight. From the first one, which urges the passenger to relax and not to worry, to the last, which emphasizes the rigid inspection of planes which insures safety and makes worry for the passenger unnecessary, the suggestions seem to us to embody about the most constructive sort of promotion for flying that has come to our attention in a long while. Incidentally, we want to quote the first suggestion in full with the thought that many of our readers may want to make an embossed copy of it for presentation to back-seat automobile drivers of their acquaintance. Here's the way it runs: "Don't worry. Relax, settle back and enjoy life. If there's any worrying to be done, let the pilot do it; that's what he is hired for."

\* \* \*

### Trend Toward Greater Efficiency Continues

A RECENT Department of Commerce report evidences clearly the gains in efficiency made by the automotive industry. The figures are interesting despite the fact that they merely emphasize a general trend already known to exist. Taking 1919 as a base of 100, the survey shows that the physical volume of production in 1925 had increased to 238.3 in vehicles for land transportation while the number of persons engaged in the manufacture of such vehicles had increased only 108.3. This shows, of course, a very decided increase

in volume of output per man. There is every reason to believe that the same general trend has continued during the last year and a half, although detailed figures on that period are not available.

\* \* \*

### Rumors of Mergers Still Flying Fast

IN the truck field, in the tire field, in the passenger car field, in the parts field, rumors of mergers continue to fly about. That some of this smoke will be pierced by actual fire seems almost certain, but just where it will break through is hard to tell. In some cases the rumors have been wholly unfounded, but there is no questioning the fact that moves toward consolidation have been and are going on in a number of individual cases. There probably is no stronger tendency in this direction today than there has been for several years, but the trend already noticeable is being continued. It is safe to predict that in the next year or so numerous smaller mergers will be consummated as they have been in the last few years. Whether major consolidations, especially in the passenger car field, will take place or not seems much more highly speculative. A merger of successful companies must provide definite advantage to all concerned and the distribution of that advantage to the entire satisfaction of all parties and interests involved is not the task of a fortnight.

\* \* \*

### Lower Meat Consumption Raises Shoe Prices

EVERY day some new thing transpires to evidence the great interdependence of the various units of modern industry. Whatever may be the efficiency of methods in a particular group, it must be affected

to a greater or less extent by customs or activities in another, sometimes very far removed, field. A statement from the National Shoe Retailers' Association the other day, for instance, predicts higher prices for shoes "because the public is eating less meat." The trend toward vegetarianism, the statement indicates, has made the supply of tanning products limited and thus resulted in a price increase. Similarly, changes in social or economic habits of people in remote parts of the world have had and in the future may have further effect on the ultimate growth of the automotive industry. Hardly any movement is too far afield to merit at least casual study by those trying to peer far into the future of automotive progress.

\* \* \*

### Industry in Another Drive Against Taxes

BEFORE long the automotive industry will be in the midst of what is hoped to be its last drive for the removal of war taxes from its products. Whether that hope is realized during the next session of Congress remains to be seen; its realization is not a certainty at this time by any means. The Senate committee has proposed that the remaining vehicle tax be further reduced from 3 to 1½ per cent. The industry itself feels, however, that the original and logical reason for the tax having long since passed away, it should be wiped off entirely. From now until the question actually has been through the mill of the next Congress, every element in the industry may well work to impress upon representatives and Senators the fundamental justice of the request for elimination of automotive nuisance taxes—N. G. S.

# "Never Stand Still" Tradition Automotive Vitality

Industry's greatest strength lies in its inborn tendency toward constant change. Flexibility its watchword.

*By Norman G. Shidle*


THE remarkable progress in quality of automotive design and volume of manufacture made in the relatively brief span of a quarter of a century has been due very largely to its having developed free from most of the manufacturing and designing traditions of older industries which preceded it. This statement has come to be almost axiomatic among students of automotive economy. In addition to explaining the past, moreover, it generates some interesting speculations about the future.

To begin with, the progress of the automotive industry, like that of any other, is the product of the thinking and resultant activity of a large number of individuals. The type of thinking probably has determined the rate and direction of that progress far more than the activity, the effectiveness of the latter being predicated largely on the soundness of the former. Mental flexibility was an outstanding characteristic of those who nursed the automotive business during its infancy, supported it through its early youth and guided it to its present maturity. This flexibility doubtless came about as much by reason of lack of any existing rules to fit the new conditions as through any unusual quality of mind peculiar to this particular group of men. The fact remains, nevertheless, that the automotive industry ever since its inception has been governed largely by men who—partly through necessity and partly through choice—have frequently and readily changed the direction of their thought or the manner of their activities.

## Fixed Rules Came Into Being

Gradually, as a reasonable degree of mechanical perfection came to be built into the average motor vehicle, part and accessory, the natural human tendency to set up fixed operating rules began to come into play. Here again we are faced with a tendency growing out of normal individual psychological processes rather than out of planned business procedure, although a strong element of the latter undoubtedly did enter into the situation.

It is true, nevertheless, that, left to its own devices, the average human mind tends toward inertia; its ideas become more or less fixed; its possibilities of conception rigid. Change in ideas or methods involves definite mental effort; constant change means constant mental discomfort in a certain sense at least. Even those people whom we think of as most "open minded" usually have somewhere within them certain subjects or certain mental areas where they are fundamentally as fixed and rigid as the persons whom the average man thinks



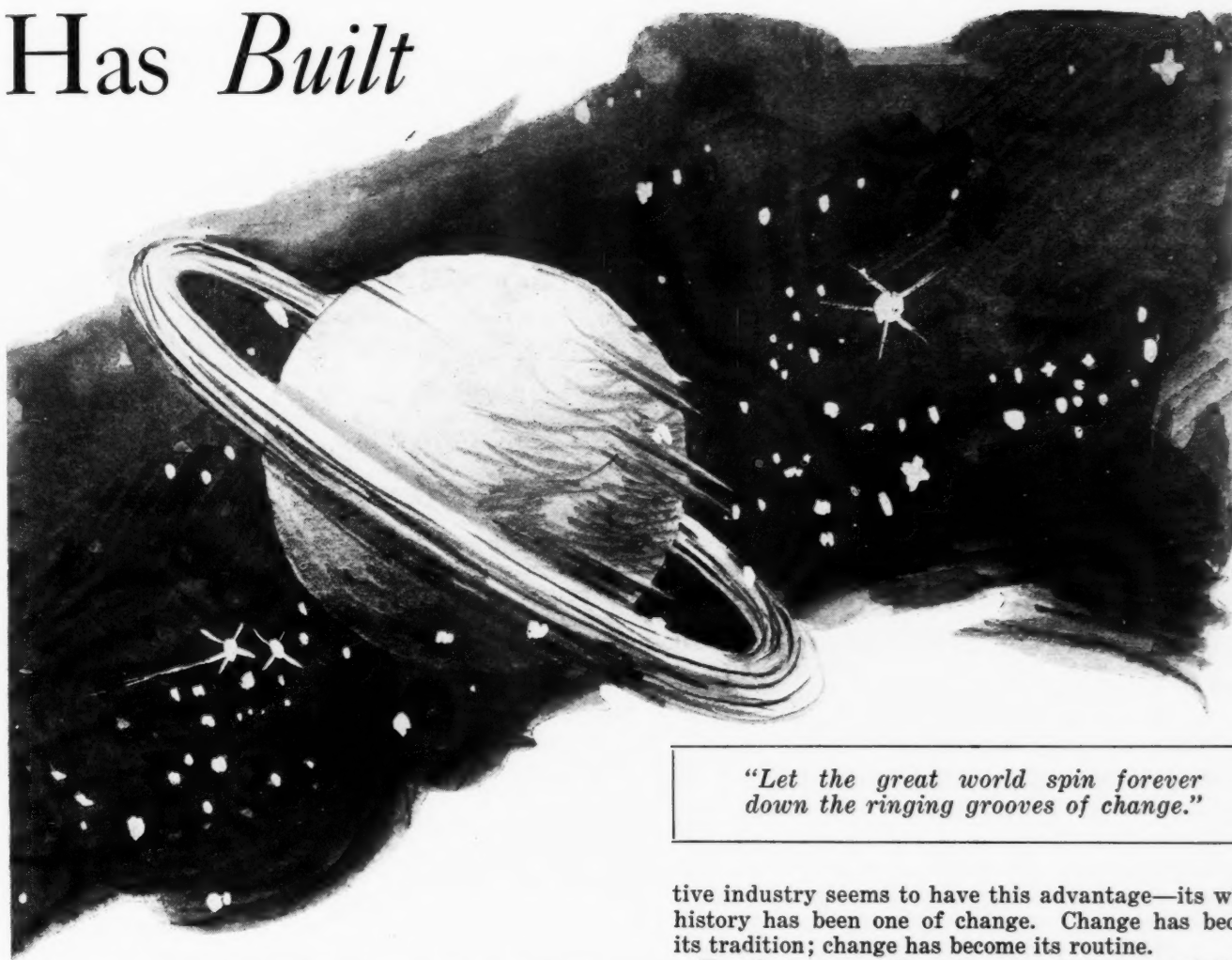
most "narrow minded." The only difference between the two groups is one of degree. Thus, as the industry put behind it more and more years of experience, the natural tendency was to draw on that past experience as a basis for future procedure; to follow to a large extent those methods and designs which already had been proven.

Following normal psychological tendencies as well as thoroughly sound business procedure, the automotive industry began to have a background of practice upon which to build its future theory. The result was that a period of very rapid progress ensued in which great strides were made both in the design and construction of motor vehicles. Past experience became a very valuable part of current progress and made possible a distinct acceleration of automotive development.

It was during this period that standardized, quantity production methods saw their most rapid development. A tendency toward standardization of models to conform with repetitive, quantity production methods began to develop. And since this tendency toward lack of change fitted in so well with the normal mental desires of the average individual, it finally began to show signs of continuing past its point of economic usefulness. In some older industries the same condition had arisen and in the end worked very greatly to the disadvantage of the industry from a business standpoint. The sound



# Has Built



*"Let the great world spin forever  
down the ringing grooves of change."*

idea of standardized methods gradually developed into the unsound one of attempting a permanent stability at a given point. This in turn gave rise to traditions which took on the form of binding rules instead of remaining, as they should have, merely a basis for future developments. And the natural inertia of the human mind found temporary comfort in such stability and consequently tended to nurture a condition whose very stability sooner or later was to prove its element of greatest instability.

Signs of this trend a few years ago began to show even in the automotive industry. In a few cases those signs became very clear and finally developed into proportions so large as to bring about the unfavorable conditions which finally had resulted under similar circumstances in other industries.

But the automotive industry as a whole had behind it so long a period of constant change and flexibility that the very process of change itself had become a tradition. This tradition of change, built up over a period of 25 years, was so strong in the industry as a whole, that it stopped short of the pit into which some older industries had walked. Enough automotive minds had become used to the idea of constant change to make the mental inertia against change far less than in some other industries. The old struggle between the tendency of ideas to become fixed and the tendency of natural and economic forces to change constantly went on and is going on in the automotive industry as it does in every other kind of business. But the automo-

tive industry seems to have this advantage—its whole history has been one of change. Change has become its tradition; change has become its routine.

For that reason, the automotive industry probably is on a firmer foundation today than at any other time in its history. Every year it is accumulating more past experience upon which to draw. But its tradition of change has become so strong as to insure it against the dragging weight of stagnation which hangs at its back.

The idea of change can easily be carried to extremes from a business standpoint, but the existence of the possibility of change must ever remain in the industry or the organization which is to continue successful. Flexibility—of organization, personnel and mentalities—is the essential quality so widely found in the automotive industry which tends to differentiate it and point it toward a somewhat different future than that which might be excepted if that future were to be predicted purely on the basis of statistics concerning the rise and fall of some other industries in the past.

## The Progressive Spirit

A desire to keep up-to-date rather than to succumb to the innate tendency to stand pat has been characteristic of a majority of automotive companies and executives, only a minority having exhibited strongly those traits of rigidity which tend toward economic stagnation.

So long as flexibility continues to be the most important of automotive traditions, no basic fears need be held concerning the future of the industry. Without fear for its destiny it can say with Tennyson, "Let the great world spin forever down the ringing grooves of change."

# England Issues New Regulations Governing Bus Design

Many points not heretofore subject to official regulation,  
except in case of London vehicles, covered. Overall  
length for all jobs over three tons limited.

By M. W. Bourdon

THE British Ministry of Transport has issued new regulations as to the dimension, weights and brakes of motor buses and trucks. The regulations deal largely with features of bus and other public service passenger vehicles carrying more than eight people beyond driver and conductor. As will be seen hereafter they cover a large number of points, the majority of which have not been the subject of official regulations hitherto, except in the case of buses licensed for use in London.

Nor more than two doors or openings for passengers may be provided and neither may be on the right-hand side of the vehicle, viz.: the side removed from the foot-path. There must be entirely unobstructed internal accessibility to all seats. The minimum height inside at the center line of the vehicle from the floor to the lower edge of any depending part of the ceiling shall be 63 in. where not more than 20 seats are provided and 70 in. where that seating capacity is exceeded.

When longitudinal seats are fitted there must be at least 54 in. from the back-rest of one seat to the back-rest of the one facing it. A seat length of 16 in. must be allowed for each passenger on both transverse and longitudinal seats.

Transverse seats must have a clear space of at least 25 in. in front of the back of each one; where such seats face one another there must be 19 in. leg clearance between them. Any form of seating accommodation across or in gangways is prohibited, except in vehicles having a folding top (e. g. motor coaches). Gangway width must be at least 12 in. wide at sea level and 14 in. above.

Interiors must be adequately ventilated without opening the main windows. All vehicles, open or closed, must have means whereby passengers can signal to the driver or conductor. If no conductor is carried, a rear mirror must be provided for the driver.

The lowest step at entrance must be not more than 17 in. above the ground or less than 10 in. when the vehicle is empty. Doorways must be at least 18 in. wide, or give at least 18 in. clear opening.

If the body has a permanent top and the entrance is not at the rear end, an emergency door opening out-

---

THIS article by Mr. Bourdon, summarizing in detail the latest British regulations as to bus and truck construction, is of interest not only as showing how thought over there is crystallizing on this important subject, but also as guidance for those American manufacturers who are building commercial vehicles for the British market.

---

wards must be provided behind and clear of the rear wheels; it must be easily accessible to the passengers and so fastened as to enable it to be opened from both inside and outside. If the door handles at ordinary exits are on top of or inside the doors they must have double locks or safety catches.

It is specified that the front and rear wheel tracks must be as nearly as possible the same and that in no event must the front wheel track be less than that of the rear wheels. The track must not be less than 72 per cent of the overall width of the vehicle (which is limited to a maximum of 90 in.) in the case of a double deck bus, or 69 per cent in a single decker or coach.

When the axle weight of any vehicle exceeds four long tons, the diameter of the wheels, unless they have pneumatic tires, may not be less than 1010 mm.

The rear springs must be attached to or bear upon the axle as near to the wheels as possible, and their width apart, outside to outside, must be at least 50 per cent of the overall width. The front springs must be spaced not less than 42 per cent of the overall width on double deck buses, or 37 per cent on single deckers. Transverse springs are prohibited. Left-hand drive is also not allowed. No hub cap may project more than 3½ in. beyond the rim of the wheel.

## Location of Fuel Tanks

Fuel tanks must be so placed that any overflow cannot fall upon woodwork, or accumulate where it can be readily ignited. The exhaust pipe must not be fixed in such a position that oil, or any vaporizable or inflammable material, is likely to be dropped on to it. Carburetors must be so placed, incased or screened as to prevent any leakage of fuel falling on to the ignition apparatus or any wire or connections carrying electric current.

No passenger shall be permitted on the right-hand side of the driver, the rule of the road being "Keep to the Left." Where passengers are carried on the left of the driver a space of at least 18 in. from the center of the steering column to the left of it shall be reserved for the driver and divided off by a solid partition at



least 9 in. high.

Vehicles not fitted with running boards, or continuous steps between front and rear wheels or fenders, must be fitted with guard rails inclosing the full length of the space between the wheels or fenders.

The overall length of buses and trucks weighing more than 6720 lb. (three long tons) is limited for the first time, and while four-wheeled vehicles are given a maximum of 27 ft. 6 in. (or 26 ft. if a trailer is drawn), vehicles of the rigid six-wheeled type can be of any length up to 30 ft.

In the case of four-wheeled buses the total laden axle weight must not be over 9 long tons and the weight of any axle must not exceed 5½ tons. Rigid six-wheeled buses can, however, have a total laden weight of 12 tons and six-wheeled trucks 19 tons, though the maximum unladen weight for both buses and trucks with six wheels is 10 tons.

A limitation is set upon overhang behind the rear axle center of four-wheelers, and a line 4 in. behind a point midway between the two rear axles of six-wheelers. The maximum overhang beyond those points is 7-24ths of the overall length of the vehicle.

Then, too, a minimum ground clearance is specified; in the case of four-wheelers it is 10 in. for 14 ft. 6 in. from the front of the vehicle and in that of six-wheelers 10 in. for 13 ft. from the front.

The diameter of the turning circle is also covered;

it may not be greater than 60 ft. where the overall length is 26 ft. or less, or 66 ft. where the overall length is more than 26 ft.

Brakes are dealt with as follows: Every vehicle must have at least two independent sets of brakes, one if not both acting directly upon all the wheels except the front (though front brakes are not barred) and not through the transmission. The brakes will not be deemed independent if the failure of any part of the operating mechanism of one of them could by any chance affect the operation of the other. There is only one exception to the provision that all parts must be independent and that relates to the drums, which may be common to both sets. In the case of rigid six-wheelers, one set of brakes may act upon the middle axle and the other upon the rearmost axle.

In a circular which the Ministry of Transport has sent to public authorities explaining the new order it says among other things that it considers the higher maximum weight for rigid-frame six-wheelers is justified on the ground that vehicles of this type, if suitably constructed, offer special advantages from the standpoint of road wear, not only by reason of the wider distribution of weight but also because of the reduction of impact between the wheels and inequalities of the road.

These regulations will not come into force for 12 months in the case of vehicles now under construction or those that may be registered before Aug. 15, 1928.

## 1914 Mercedes-Benz Wins German Hill Contest

THE German international one-kilometer races for sporting cars, racing cars and motorcycles were held on the course near Freiburg, Aug. 6. The German driver, Momberger, on a 2.3 litres Bugatti, made the fastest time of the meeting, attaining a speed of 192.616 km.p.h. (119.14 m.p.h.), thereby improving last year's record for cars of this class by about 13 m.p.h.

The course is a straight stretch of road, rather narrow, and, barring a few slight undulations, which caused the light racing cars to jump, was in good condition. The bumps, in conjunction with the exceptionally hot weather, were, perhaps, the reason why the record speed of the track last year established by Campari in an Alfa-Romeo of the 1500-2000 cc. class (123.12 m.p.h.) was not topped. The best speed in this class this year was 184.143 km.p.h. (114.5 m.p.h.), the driver being the well-known Christian Werner in a Mercedes-Benz. In the 1½ litres class, however, the speed was improved from 144.6 km.p.h. to 163.413 km.p.h., the driver being the Swiss, Dr. Karrer, in a Bugatti.

The performance in the small class up to 1100 cc., on the other hand, was fully 12 kilometers worse than last year when a supercharged Opel car attained 132.94 km.p.h. This year there also started a car in the class of 500-750 cc. It was a fabric bodied little 502 cc. Hanomag and attained a speed of 89.663 km.p.h. Another lone driver in a class by himself was Heusser who started with his well-known Steyr in the 3000-5000 cc. class, slightly improving last year's speed (Taxis in Alfa-Romeo) with 167.597 km.p.h.

First-class performances were obtained in the sporting car classes. Kimpel, who last year drove a Bugatti racer, succeeded in establishing a new world's record in the 5000 to 8000 cc. class with flying start. He had one of the new supercharged 6.8 litres Mercedes-Benz cars, the engines of which are said to develop 260 hp. on

the brake station, and averaged 177.427 km.p.h. Kimpel's partners were Walb and Caracciola in similar cars. The former did 175.09 km.p.h., while Caracciola, who was last year's victor, lagged behind. It is claimed he was handicapped by having tanked ordinary fuel whereas the others were driving on synthetic fuel made by the Bergius-Bosch process. The previous record of this class was held by the Hungarian, Delmar, in a Steyr car. This driver started in the 3 to 5 litres' class and succeeded in greatly improving last year's speed standing at 151.451 km.p.h. by doing 174.334 km.p.h. The second in this class was Countess von Einsiedel, also driving a Steyr, but she was far behind Delmar.

In the 2-3 litres' class also speeds were turned up considerably, the winner being the Swiss, Escher, in a Bugatti with 160.929 km.p.h. (previous best 143.027 km.p.h.). In the 1½ litres' class of the sporting cars only Kappler in a Simson-Supra started but he could not beat last year's best speed standing at 124.611 km.p.h.

The next day saw practically all of the drivers and machines of the previous day starting for the hill-climbing contest on a road leading from Freiburg up into the mountains. The trial stretch has a length of 12 kilometers with a difference in altitude of 800 meters. With its 173 corners, some of them very sharp, it is by no means an easy road.

The record for this course was held by Christian Werner, who last year attained an average speed of 69.28 km.p.h. requiring 10 min. 24.2 sec. He was then driving a Mercedes-Benz of the 2 litres' class. This year the old record was beaten by four cars. The hero of the day was Rosenberger, who drove the old 4½ litres Mercedes-Benz with which Lautenschlager had in 1914 won the Grand Prix de France. Rosenberger covered the distance in 10 min. 10.2 sec. at an average speed of 70.797 km.p.h.

# New Developments of Interest

**A**NNUAL show time for the machine tool industry comes this month. The exhibition at New Haven, Conn., which is staged annually by the New Haven Chamber of Commerce, the Sheffield Scientific School and the American Society of Mechanical Engineers, will be held Sept. 6-9. During the week of Sept. 19 two shows will be held, that of the National Machine Tool Builders Association in Cleveland, and the exposition of the American Society for Steel Treating in Detroit.

In preparation for these events the machine tool builders are bringing out many new designs which have special application in the automotive field. The following descriptions were obtained in advance of the shows and cover most of the important developments.

## Grinder With Hydraulic Feed

**A**SURFACE grinder equipped with Oilgear hydraulic feed mechanism to give speeds varying from almost zero to 55 f.p.m. for the table and with a very fine vertical adjustment of the grinding wheel has been developed by Gallmeyer & Livingston Co., Grand Rapids, Mich.

In this new machine the Oilgear is also attached to a cross feed engine so arranged that the cross feed is actuated at each table stroke, to feed in or out at varying speeds as the work requires. The base of the machine is very heavy in order to provide rigidity necessary for accurate work and the spindle head is also a heavy casting to secure rigidity.

For rapid adjustment in raising or lowering the wheel head a large hand-wheel shown in the illustration is employed. For more accurate work the small wheel,



Gallmeyer & Livingston No. 4 surface grinder with variable table travel speeds

## Machine Tools and



or knurled knob, provides a sort of vernier adjustment which can be read in tenths of thousandths.

Standard spindle construction provides for wheels 10 in. diameter by  $\frac{3}{4}$  or 1-in. face. The machine illustrated is equipped for dry grinding only. They may be supplied for wet grinding, with magnetic chuck or with dust collecting systems. The automatic table travel has limits of 26 in. longitudinal and  $11\frac{1}{2}$  in. transverse. The working surface of the table is 10 by 24 in. Vertical movement of the wheelhead is  $13\frac{3}{4}$  in. Maximum distance from wheel to table under 10-in., wheel is  $12\frac{1}{4}$  in. Net weight, with self-contained motor drive for dry grinding and without accessories, is 4025 lb.

## Cincinnati Brake Drum Grinder

**A**NEW machine for grinding brake drums has been announced by Cincinnati Grinders, Inc., and is claimed to have an unusually high production for this class of work. Brake drums are ground at the rate of one minute each, the floor to floor time being such as to give a production of 45 per hour. Where the drums are produced with close limits in the dies it is possible to grind them from the "block"; but some manufacturers turn their drums after they have been heat-treated, and this facilitates the grinding, as a great deal of the excess stock is removed by turning.

The brake drum grinder with a drum in place is illustrated by the photo-reproduction herewith. Among the factors contributing to its high production capacity is a 30 hp. motor which is built into the machine. Drive from the motor to the spindle is by "textrope." The wheel is the largest that can be used for the work, of 14-in. diameter and 3-in. face, and is carried on a heavy spindle. The complete machine weighs 12,500 lb.

### Work Held by Air Chuck

The work is held on a face plate by means of an air chuck. Dead stop sizing on the wheel infeed is facilitated by a dial gage permanently located in position. The wheel truing tool is likewise permanently located. The 2 hp. work-head motor is of the variable speed type and is controlled by an accessible rheostat. Starting and stopping of the work rotation is by push button control. The work rotation is stopped by a dynamic brake. The work saddle is provided with an adjustable dead stop to facilitate positioning of the work in relation to the grinding wheel. All of these factors contribute to quick operation and quick loading, and they reduce the efforts of the operator to the actual control of the machine. The normal operating position is immediately in front of the grinding wheel where he can



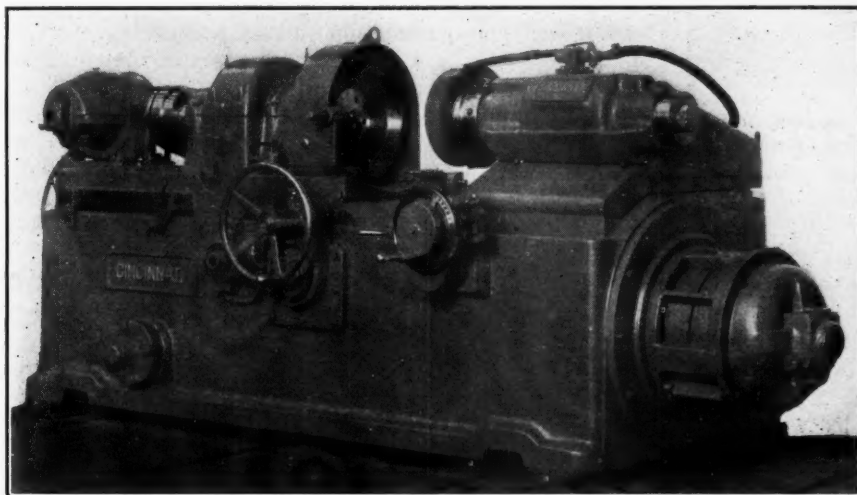
# to Automotive Production Men

## Other Shop Equipment



see the wheel at work. A coolant tank is built into the machine and contains a pump which is constantly primed. Where direct current is not available a generator may be mounted on the machine. Control of the machine is entirely electric.

In the operation illustrated an 18-in. drum with 3-in. face is being ground, 0.008 in. of metal being removed from the diameter at the rate of one drum per minute of actual grinding time. A carborundum aloxite wheel is used. The work is held to limits of plus and minus



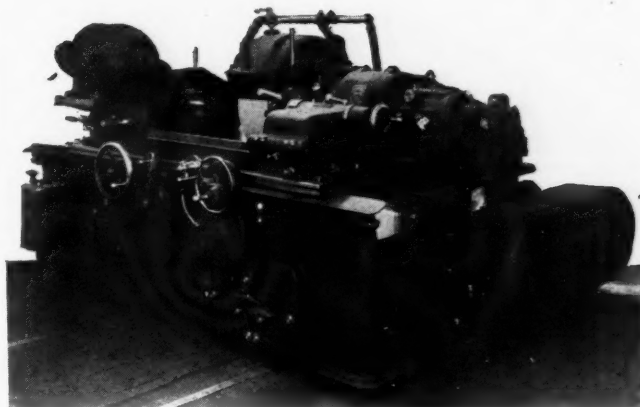
*Cincinnati brake drum grinding machine*

0.003 in., and with this combination a good commercial finish is obtained. The material is heat-treated steel.

### Norton Heavy-Duty Grinder

NORTON CO., Worcester, Mass., has developed a heavy-duty machine with a swing of 14 in. and capacity for a wheel 15 in. wide to handle wide wheel, straight infeed grinding work too heavy or beyond the capacity of most grinding machines. In general, the machine is similar to the Norton Type BA construction but all dimensions have been increased to provide strength for the heavy service contemplated.

The arrangement is for self-contained motor drive, a 30 hp. constant speed motor being used for the main drive and a 2 hp. adjustable speed motor for the headstock drive. The power wheel feed is provided with 20 different infeed speeds. The infeed is steady and positive and at the predetermined size the infeed is stopped by contact of the index with the index pawl.



*Norton 14 in. heavy-duty Type BA cylindrical grinder*

Compensation for wheel wear is made by movement of the index in increments of 0.00025 in. on the work diameter.

The wheel spindle is 47 in. long over all, of heavy design and runs in Norton Type B spindle bearings. The boxes are made as solid half bearings with two adjustable bearings backed by thumb screws to permit adjustment while the spindle is running. Lubrication of the spindle is by force-feed flood system. The spindle is driven from below resulting in a downward belt pull while a weighted idler maintains a constant tension.

A reciprocating attachment, can be applied for slowly moving the wheel back and forth in direction of its axis. Power table traverse is provided for use in turning the wheel. Variable work speeds are available through the adjustable speed headstock motor. The weight

of the machine is about 11,800 lb. without motors and 13,300 lb. with motors.

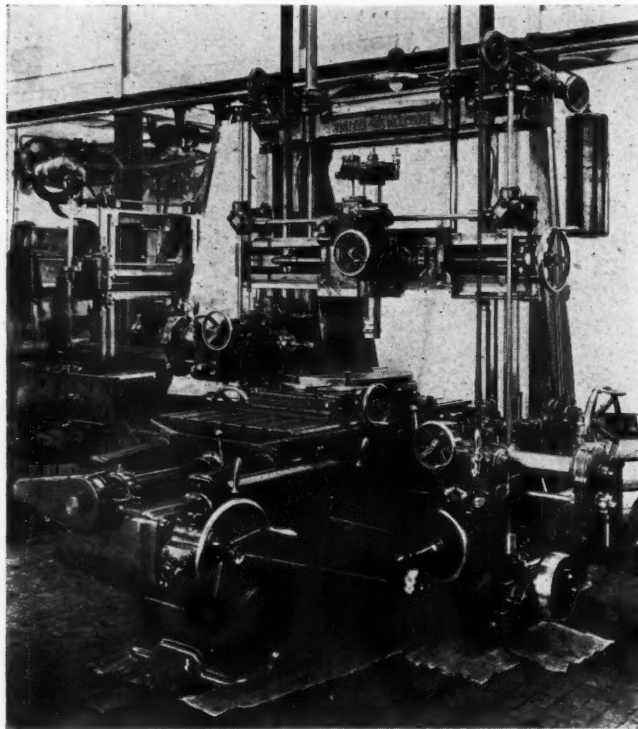
### Three Coordinate Jig Borer

THE development of a three coordinate jig boring machine by the Societe Genevoise d'Instruments de Physique, Geneva, Switzerland, is announced by The R. Y. Ferner Co., Washington, representatives in this country. This unique machine is equipped with three boring spindles so that it can perform work simultaneously in the coordinates of length, width and height, and by the use of a rotating table, five of the six surfaces of a box jig can be bored with a single set up.

Another feature of the machine is that three holes can be bored in exactly the same place simultaneously, the direction of one being at right angles to the other two, which may be from opposite directions in the same straight line. The machine can also be used as a standard single or two-spindle boring machine.

The type of construction of this Model 7 is shown in

the accompanying illustration and is essentially similar to that employed in previous boring machines built by this company. The bed has a large rectangular table



*Societe Genevoise three-spindle boring machine designed for rapid and accurate locating and jig boring work*

51 x 28 in., on a flat and V-shaped way. Two upright pillars, one at each side of the table, support a cross rail which can be raised and lowered through a range of 25 in. and which carries a slide to which is attached the vertical spindle. The vertical spindle has a cross motion, transverse to the motion of the table, of 28 in.

Each of the two uprights also carries a horizontal spindle whose slides are counterpoised by weights at the back of the machine. These horizontal spindles are moved by micrometer screws through 30 in. and are provided with micrometer heads and verniers with automatic compensating devices for eliminating the small residual errors.

The maximum height of the vertical head above the table is 30 in., while that of the horizontal spindles is 24 in., the excess 6 in. being utilized in permitting the latter to be lowered below the surface of the table so that its full surface can be used for large flat work as a two coordinate machine.

Accessories supplied with the machine include items to permit easy lining up of the work piece, such as a microscope mount in the spindle, a reference square for measurements from the edge of the work piece, a dial indicating device and a semi-automatic precision center punch. Also there is available the high accuracy of parallelism of the T-slots in the table, of its edge with the ways upon which the table moves, the extreme flatness of the table, its perpendicularity to the uprights and parallelism with the cross rail.

The degree of flatness and parallelism is within 0.0004 in. in the whole range of motion of the table—40 in.—or one part in 100,000. All four micrometer drums are graduated to 0.0005 in. per division and are read by verniers to 0.00005 in. Four scales, graduated to tenths of inches, are mounted on or beside the carriage for

reading integral intervals. The screws have a pitch of five threads per inch.

The guaranteed accuracy of the displacements of the table, the cross slides and the slides of the horizontal spindles is 0.0004 in., while the maximum errors of distance between axes of holes bored on the machine, even from one corner of the table to the opposite—nearly 50 in.—is guaranteed not to exceed 0.0008 in.

The roundness and cylindricalness of holes bored on the machine with care, using a fine cut, are also guaranteed to 0.0004 in.

The left-hand horizontal boring head is fitted with guiding bearing for a boring bar, the bar being driven by the opposite spindle. A nine-speed gearbox, driven by a single pulley, gives rotation speeds to the spindles varying from 40 to 300 r.p.m.

In addition to the two-piece nuts and clamping devices for the micrometer screws, special clamping devices have been provided for the ways of the table to resist the side thrust of the horizontal spindles. Other clamps are provided for the cross beam, the slide on the cross rail and the slides on the horizontal spindles. A special circular table has been designed for this machine, 23½ in. diameter, and having a graduated drum and vernier reading to one second of arc.

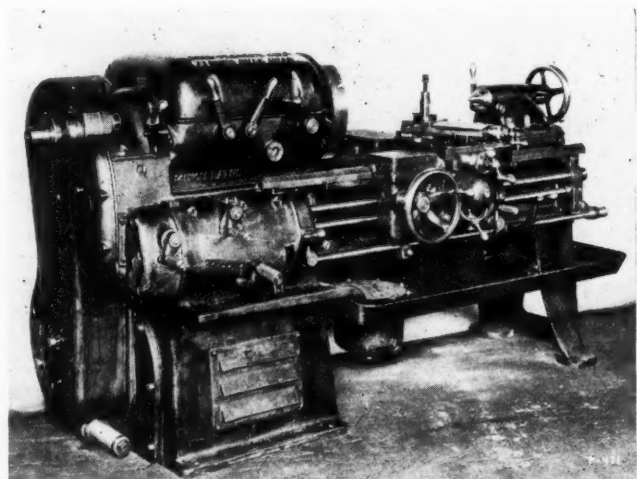
Other accessories include an indicator for setting centers of the horizontal spindles flush with the surface of the table or with the top of a box jig; four adjustable boring tools; two reduction sleeves permitting the use of tools with No. 2 or No. 3 Morse cones in the spindles, and setting up and assembling tools.

The maximum diameters that can be drilled with the machine are: in soft steel, 1¼ in.; in cast iron, 1¾ in. The maximum diameter that can be bored is 6 in. while holes up to 12 in. in depth are possible. The machine is 9 ft. long by 7½ ft. wide by 10¼ ft. high and net weight is 13,000 lb.

## Reed-Prentice Lathe

**R** EED-PRENTICE CORP., Worcester, Mass., has announced a 14-in. sliding geared head lathe designed for heavy duty work and adapted for modern machine requirements. The machine has a swing of 16½ in. and takes work 30 in. long when equipped with the standard 6-ft. bed.

The sliding geared head construction provides eight spindle speeds ranging from 16 to 384 r.p.m., changes being accomplished by two levers placed at the front of the headstock. Feeds are provided ranging from



*Reed-Prentice sliding geared head lathe*



.0025 to .160 in. per rev., and threads from 2 to 128 per in. A built-in motor, either 3 or 5 hp., is located in the cabinet leg and drives through a belt provided with an adjustable spring idler.

Two levers are provided for the friction start and stop. Cross and longitudinal feeds are operated by a lever in the apron. The carriage is arranged to receive taper attachments.

## Footburt Broaching Machine

**A** REVOLUTIONARY method of finishing flat or irregular surfaces by broaching in place of milling is used by The Foote-Burt Co. in its new "Footburt" broaching machine. With this machine one or more surfaces are roughed and finished in one operation. The finish is said to be equal or superior to that of a milled or planed surface, and the cut can be held within unusually close limits.

One example of work handled by this machine is the broaching of both sides of the two bosses (four surfaces in all) of a tie rod yoke. These pieces are easily handled by one operator and one machine at the rate of 600 per hour. Another example is the work on steering knuckles. The two flat surfaces that receive the dust cover for the front wheel brake are broached at the rate of 120 pieces per hour.

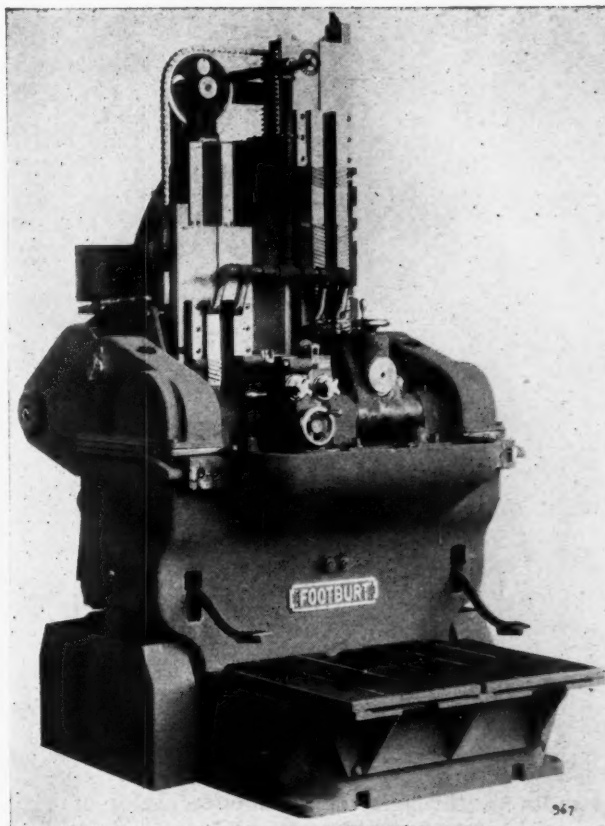
While this production is exceptionally high, it could still be greatly increased were it possible for one operator to load and unload work at a higher rate. On the steering knuckle the travel of the broach is 9 ft. per minute, which is only about 10 per cent of its possible cutting speed. This greatly increases the life of the cutting edge of the teeth on the broach.

The lower teeth on the broach always do the roughing work and the upper teeth are always reserved for the lighter finishing cuts. Another advantage of the broaching process as here applied is that the broaching teeth are solidly supported directly behind the cutting edge. These are the reasons for the unusual accuracy and finish obtained with the broach.

Briefly, the machine consists of a base with two up-rights. Slides to which cases holding the broaches are bolted, operate alternately up and down on the ways of these up-rights. The machine is driven by a 17 hp. elevator-type reversing motor. Power is taken directly from the motor through a set of spur gears and one set of bevel gears to the driving pinion. This pinion is between the two slides and in mesh with hardened steel racks mounted on the slides. The slides balance each other and as one moves up the other moves down. They operate continually at a speed predetermined by the nature of the work. Dogs bolted on the left-hand slide work a lever which operates the switch governing the reversing of the motor.

In front of each slide is a tip-up fixture for holding the part which is being machined. When the slide is at the bottom of the stroke the fixture is in a horizontal position, and the piece to be machined is placed in it while the slide moves up. As soon as the piece is in place, a lever is tripped and—provided the lever is operated before the slide reaches the top of the stroke—the fixture is automatically tipped to an upright position. The slide moves down and the piece is broached, the fixture being automatically thrown back into the horizontal position for unloading and reloading as soon as the slide has completed its downward stroke. One operator is able to unload and reload each fixture as it is thrown back into the loading position.

Broaches and fixtures vary according to the nature of the work.



*Footburt broaching machine. Tip-up fixture on left is shown down, in the loading position, while that on the right is up, in the cutting position*

With the tie rod yoke, speed in loading and unloading is essential, and the yokes are merely placed in position in the fixture without clamping. For convenience, a hand trip lever is used, and when the fixture is tipped the piece is automatically clamped in place. When the fixture is thrown back to the horizontal position the piece is released and may be picked out. The trip lever acts as a safeguard, as it cannot be operated if the piece is not in the proper position. If the trip lever is not operated before the slide reaches the top of the stroke, the fixture will not be tipped up until the next cycle.

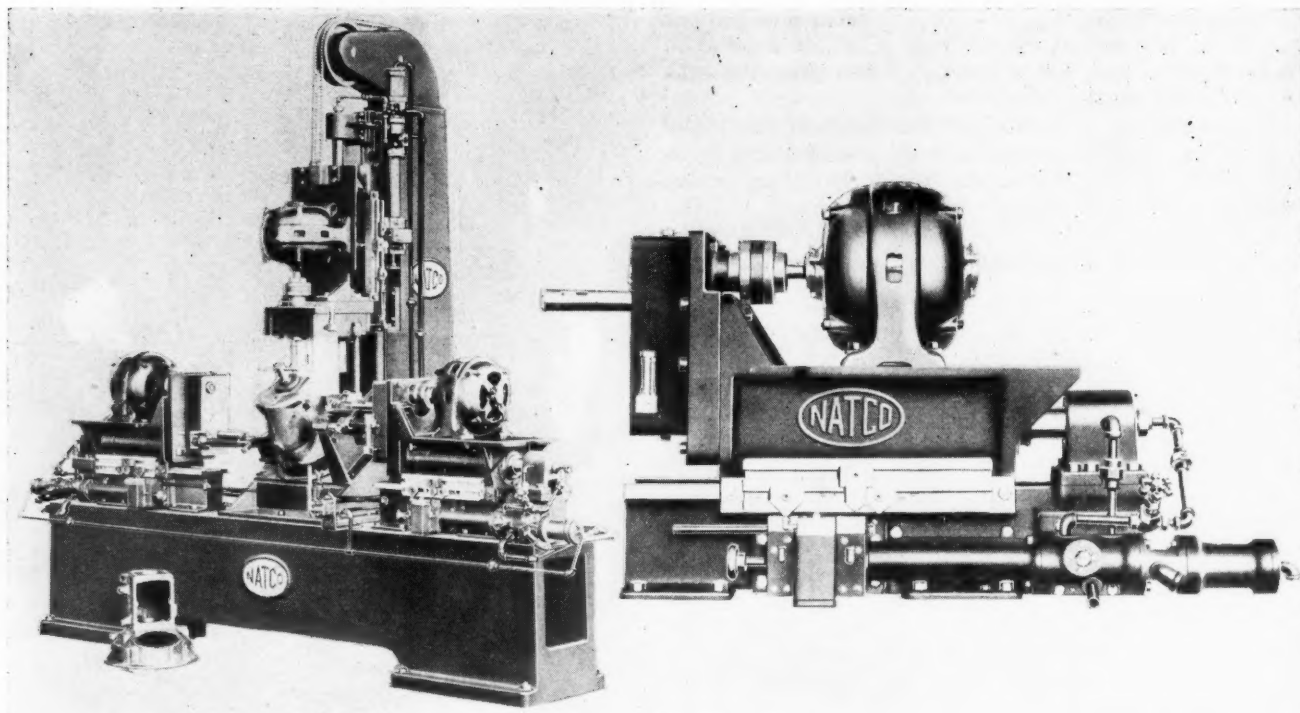
On the steering knuckle job the piece is clamped in the fixture by hand and the trip is operated by a pedal. The illustration shows the machine used on this piece.

An abundance of coolant is used on all broaching work. The entire base of the machine is used as a tank and has a capacity of 60 gal. The pump delivers the coolant to the work at the rate of 40 gal. per minute.

## Natco Drilling Equipment

**A** NEW 4-in. sliding-head type, hydraulic unit drilling equipment is being offered to automobile manufacturers and others by the National Automatic Tool Co., Richmond, Ind., and a complete machine built up of these new units will be shown in operation at the National Machine Tool Builders' Exposition at Cleveland.

Each unit, with motor and spindle box is a complete drilling machine when attached to a supply pump. Individual feed control valves, operated by adjustable trip dogs, completely control the head movements. All units on one machine are started simultaneously from a single valve at the operator's position, after which



*Natco 4-in. hydraulic unit drilling equipment and complete machine built up of such equipment*

the units go through their complete cycles of rapid-forward, slow-feed, rapid return and stop, automatically. This starting valve also serves as an emergency reverse.

To conserve space and piping, some radical changes have been made in the general design. The hydraulic cylinder is cast in the head slide and the feeding pressure for both forward and reverse enters through the center of the piston shaft. This reduces the overall length to 44 in., the width being 15¼ in. and the height over the top of the motor approximately 24 in.

The maximum head travel of 11 in. need only be used when necessary, as the travel and feed can be limited to the requirements of the job, by the adjustable trip dogs.

Each unit will drive two 1-in. drills at 0.010 in. per min. feed in cast iron or the equivalent, while the feeding rate can be set from nothing to the rapid traverse rate of approximately 75 in. per min. A 3 hp. motor is recommended for capacity drilling.

These units may be arranged horizontally, vertically or at any angle desired. The three-way driller illustrated has two horizontal and one vertical unit for drilling three sides of 90 transmission cases per hour.

### Full Automatic Grinder

**A** RECENT development of the Norton Co. is a 4 by 5 in. Type B full automatic grinding machine designed to give large production with accuracy. The entire operation of the machine is controlled automatically to insure uniformity of work and it is capable of handling pieces up to 4 in. diameter and 5 in. long.

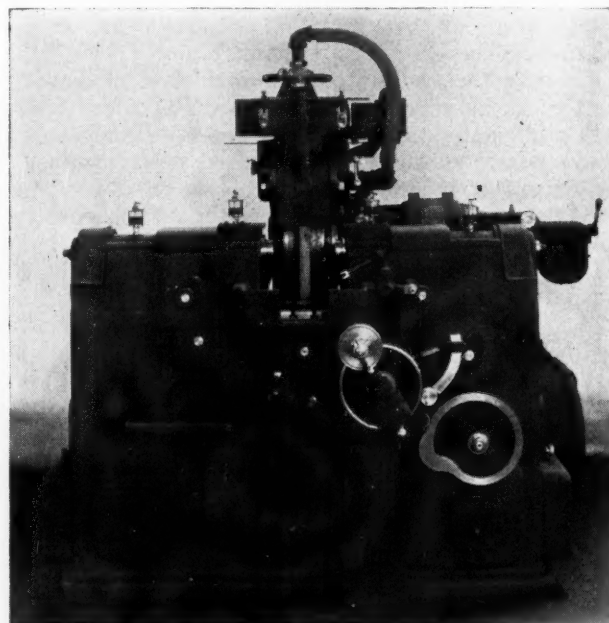
Concentricity of the ground surface with the hole or with other diameters is insured by locating the work on centers. The wheel unit is the regular Norton 10 in. Type B unit which embodies self-contained motor drive, B type spindle bearing construction and force-feed flood lubrication. The wheel feed is linked with the automatic controls and timed with the operating cycle for most efficient grinding action.

The front section of the machine is of new design

with positive gear drive and cam actions controlling the cycle of operations from automatic loading of the work on live centers until its ejection. The work revolution and feed can be varied to suit each job. Change gears provided means of altering the length of cycle and an adjustable index stop permits altering the dwell period.

The work is placed in the feeder and is delivered between the live centers by a mechanically operated loader of the turret type. End pressure, adjustable for different types of work, drives the piece and upon completion of the cut the work centers are withdrawn for the turret to eject finished part and insert another.

The wheel truing device is in the wheel guard and has a power traverse to insure uniformity in traverse.



*Norton automatic grinding machine equipped with automatic work-loading fixture*

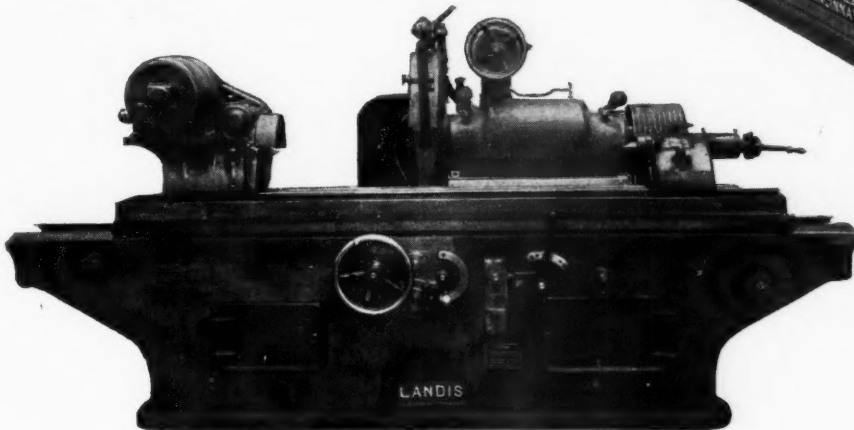


## Landis Hydraulic Grinder

THE latest models of hydraulic grinding machines being built by Landis Tool Co., Waynesboro, Pa., have a number of new features. This type of machine is now being built in swings of 10, 14, 16, 20, 24 and 28 in., in any desired lengths and with equipment for roll grinding; wide wheel or plunge cut grinding with continuous feed to the wheel head and reciprocating spindle; crankshaft grinding, and many other types of work.

A patented variable flow oil pump and hydraulic motor furnishes power for traversing, giving speed ranges from 12 to 300 in. per min. The head stock is driven by a self-contained motor. The drive is through a Tex-rope to a worm which meshes with a gear mounted on the face plate. Work speed is controlled by a rheostat at the front of the machine.

The grinding wheel head is carried on flat and V bearings. Wheel feed is through a screw and nut mounted on the under side of the base. The wheel spindle is mounted in large bronze cap bearings adjustable for wear.



*Landis hydraulic grinder*

## Portable Buffer

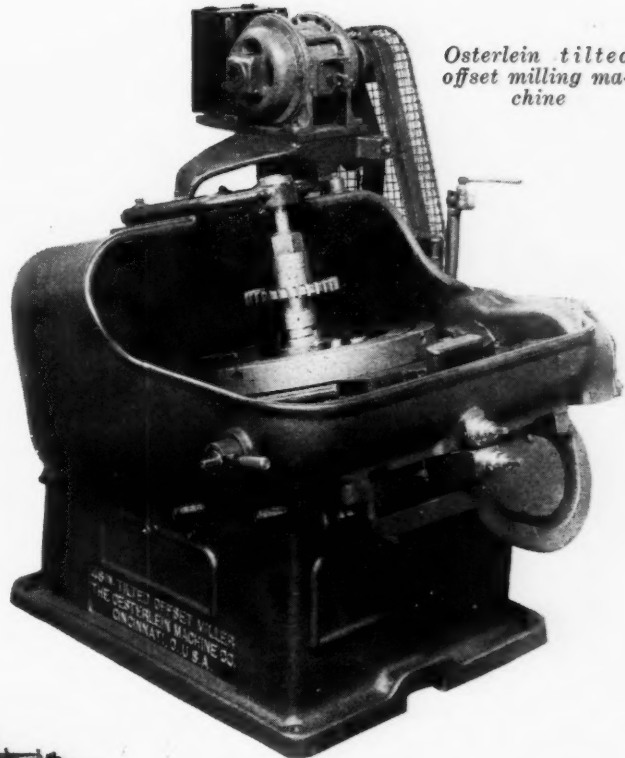
THE Valley Electric Co., St. Louis, has placed on the market a portable buffer provided with roller casters. The frame is provided with a hook for supporting the shaft when not in use. The motor is inclosed in a dust-proof casing and is pivoted to permit of movement in a horizontal and vertical plane. A flexible cord and plug are provided.

## New Osterlein Miller

A FORTY-EIGHT-INCH tilted offset miller is the latest product of The Osterlein Machine Co., Cincinnati, and has been designed for the milling of flats, slots and saw cuts and for general face or straddle milling which may be done advantageously on an offset miller.

The miller consists of an offset table in which is a large center hole and a spindle mounted at right angle to the table working surface. A 4-in. offset gives ample room for removing work-holding fixtures from the center or for making deep cuts in work. The spindle is mounted in a slide bolted to the housing which carries the table, and the arbor support is also bolted to this housing. A vertical adjustment of 2 in. is provided for the spindle.

The spindle is driven by a worm wheel of 15 in. pitch



*Osterlein tilted offset milling machine*

diameter. The table is 30 in. diameter and is tilted to shed the 40 gal. per min. of coolant without splashing and also to carry off chips.

The machine swings 48 in. in diameter and takes work 14 in. high. A 10 hp. motor is recommended to drive the machine at capacity. Its net weight is 7000 lb., and it occupies 25 sq. ft. of floor space.

## Link-Belt Speed Reducers

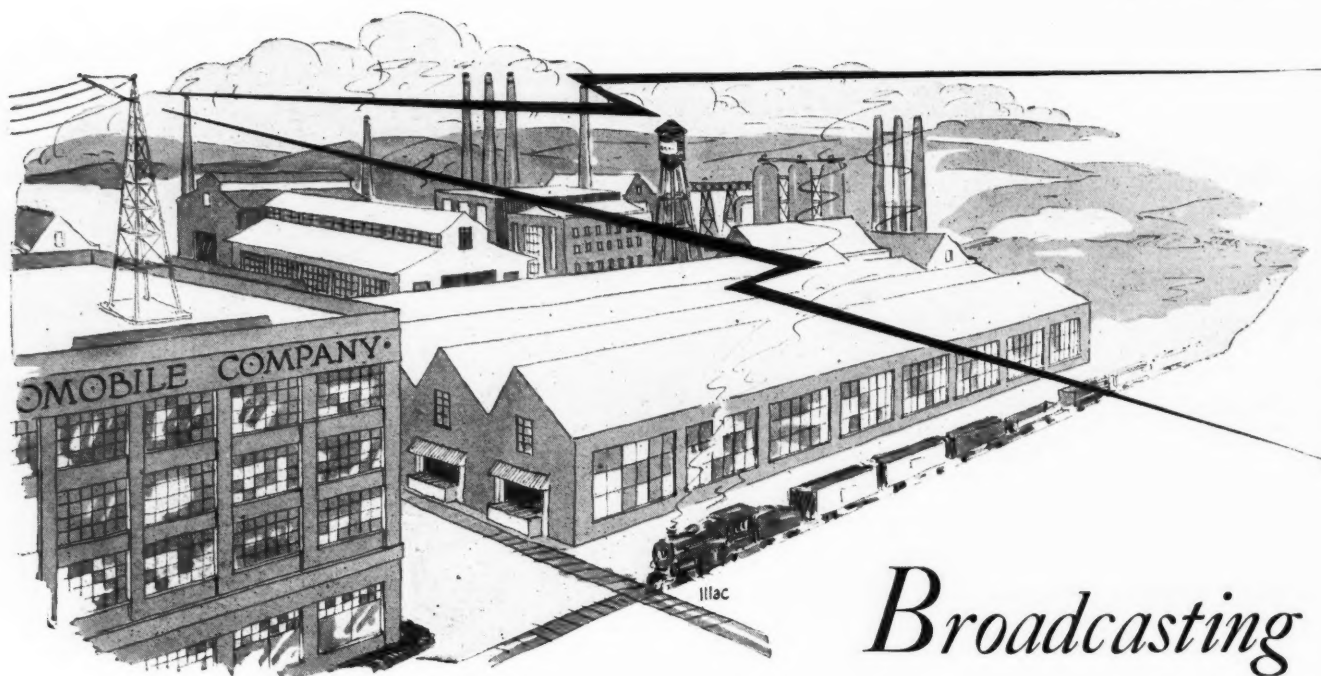
LINK-BELT CO. has recently announced a new series of speed reducers built around the Link-Belt Sykes herringbone gears. Three standard units are provided for application to all types of service.

The single reduction unit, designated as Type S, covers reductions ratios up to 10 to 1. Types D and DV are double reduction units, the former being designed for heavy duty with ratios from 10 to 1 up to 80 to 1, while DV is a light duty equipment providing ratios from 10 to 1 up to 130 to 1.

The teeth of the herringbone gears run continuously across the face and give a good bearing surface with several teeth always engaged. The pinions are of heat-treated alloy steel cut integrally with the shaft. Over-size Timken bearings are employed throughout. The gears rotate in a large oil reservoir and the bearings are splash lubricated. Special oil baffles at the shaft projections keep dust and dirt out and the oil in. The housing is free from grooves and oil wipers.

The construction of the reducers is rigid to insure proper alignment of parts and the base plate which is furnished when necessary insures alignment of the reducer and its motor.

A CONTRACT for the transportation of commercial products by air has been entered into between the German Luft Hansa (Airways) and the German Dye Trust.



## Broadcasting the Sales Message from Station A-U-T-O

*Practical side of radio advertising, used by many automotive companies, studied by Metropolitan Insurance Co.*

SINCE radio came into use as an advertising medium it has been employed as extensively perhaps by the automotive industry as by any other. Radio audiences throughout the country have tuned in on the announcement that "this is Station—, broadcasting the program of the Fleet-Six Automobile Company. You have just been listening to a selection by the Fleet-Six Symphony Orchestra. The next number on the program will be—, etc., etc."

Several car and parts manufacturing companies have entered the broadcasting field on a large scale, establishing their own sending stations and studios and putting on their own programs at regular intervals. Others have from time to time engaged the facilities of other stations on an hourly basis for advertising purposes.

Countless distributors and dealers have experimented with the radio as a business builder, some by operating stations of their own, others by broadcasting through rented channels, and some by merely directing a loud speaker toward the street and relaying musical programs, speeches or baseball scores to the passersby.

Because of this widespread use of radio advertising by automobile manufacturers and their sales agencies, a comprehensive study of the subject recently made by the Policyholders Service Bureau, Group In-

surance Division of the Metropolitan Life Insurance Co., is likely to prove of interest to many readers of *Automotive Industries*.

The study was made for the purpose of finding out just what the advertiser may expect in the way of returns from radio broadcasting under present conditions, how he should proceed in order to get the best results, and what he may expect to pay for "circulation." The following is taken from a booklet, "Radio as an Advertising Medium," in which the conclusions drawn from the study were presented:

Radio has been employed in a large way for advertising only for about two years. Consequently, as an advertising medium, it is too new to furnish much definite information for the prospective advertiser. But, if solid facts are scarce, opinion is plentiful and seems to divide itself sharply into two classes, those who think it is the best possible kind of advertising and those who think it cannot possibly be any good. Both classes seem to base their opinions largely on the single fact that radio is new.

Public opinion, always difficult to gauge accurately, appears to have accepted radio advertising as a necessary part of the excellent radio entertainment furnished by the large stations, provided the advertising is not blatantly offensive.

It is now possible to determine with some degree of accuracy just how much "circulation" an advertiser buys when he pays his money for time on the air. Radio listeners are quite fixed in their habits. Generally, two or three stations give the listener 90 per cent of his radio service, and in many cases the owner of a receiving set patronizes one station 80



per cent of the time. Only this one "favorite station" listener is worthy of consideration from the standpoint of the commercial broadcaster.

The quality of reproduction from stations within 100 miles is so much better than that of other stations more than 500 miles distant, that none in populous areas, except the long distance hunter, will prefer the latter. The long distance listener seldom seeks entertainment, but only the thrill of hearing call letters from a far away state. There is no good will value in this achievement to the sponsor of whatever program happens to be on the air.

Determination of the normal audience of a radio broadcasting station is merely a matter of geography and statistics; that is to say, an analysis of the available audience in the service area of a station. The service area is the area in which the station programs can be heard satisfactorily.

Alfred N. Goldsmith, Chief Research Engineer of the Radio Corporation of America, gives the following service ranges for broadcasting stations:

Antenna Power (Watts)	Service Range (Miles)
5	1
50	3
500	10
5000	30
50000	100

Having carefully determined the service area, the prospective broadcaster may go a step further and estimate the maximum number of people who might be listening to his program at a given hour.

For the country at large, it is estimated that one out of every three families possesses a radio receiving set. Of course, in certain areas the number of sets will be much higher than in others. It depends largely on the length of time high grade broadcasting stations have been operating in the area.

The National Broadcasting Company estimates that there are within the scope of the WEAf network approximately 3,337,000 radio receiving sets, representing 64.2 per cent of all the receiving sets in the United States.

From a survey conducted by this corporation, the average number of listeners to a set is set down as five and this figure is borne out by other surveys throughout the country.

When the prospective broadcaster has determined the potential audience in the service area of his broadcasting station, he has the figure that has the same significance to his advertising plans as has the sworn circulation statement of a magazine or newspaper. This is the audience which he is buying an opportunity to reach. There is no guaranty whatever that the entire audience will listen to his program any more than there is any guaranty that all the readers of a newspaper or a magazine will read his advertisement.

An inquiry into the number of people who will actually be listening to their radios at any given time is largely guesswork. It is equivalent to trying to determine how many people will actually read a certain advertisement in a certain issue of a magazine.

One other fact that the advertiser may set down as definitely proved is that direct sales talks over the radio are a waste of money even if they are permitted by the broadcasting station—which, as a rule, they are not. There is any amount of evidence to bear out this contention. A few broadcasters have undertaken to engage in direct selling over the radio, but they have failed. Broadcasting, properly done,

will build good will and thereby lead to increased sales, but these sales cannot be forced.

The correspondence of the Radio Division of the Department of Commerce indicates this very clearly. A number of letters have been received from retailers who protest against unfair competition furnished by the radio. Many more complain bitterly of stations that make nuisances of themselves by broadcasting direct advertising and shutting out other stations that are trying to give real entertainment to radio listeners.

It is equally apparent, however, that good will advertising is possible from the radio. One essential quality of all good will advertising, whether it be printed or broadcast, is that the message shall be interesting for its own sake and shall possess the power to claim the attention of readers or listeners. Excellence of copy or compelling art work, although helpful, is not essential in direct sales-producing advertisements. These advertisements, if they give information about the quality and cost of the goods advertised, will be read by those people who are already interested in buying the goods and will be acted on if the quality and cost seem to be satisfactory. But a printed good will advertisement must compel attention by literary or pictorial excellence. In the same way, broadcast advertising which, as we have seen, can only be good will advertising, must be carried off by superb entertainment or by useful information given in an attractive way. Successful radio advertisers realize this and are meeting the requirements in a commendable manner.

The National Broadcasting Company declares that the program alone determines what proportion of the potential audience's attention the advertiser will secure.

The prospective advertiser, having made up his mind that good will advertising will be valuable to his business, will next consider the cost of obtaining this good will through radio broadcasting.

The present cost of reaching an individual listener by radio varies among different stations. One writer thinks it varies by such an extreme ratio as 100 to 1. That such an extraordinary variation is possible is largely due to the extravagant claims made by certain broadcasting station solicitors.

#### Placed on National Basis

The most noteworthy effort to place radio advertising on a national basis has been made by the American Telephone and Telegraph Co. which, through the National Broadcasting Company, has hooked up a number of other stations with the New York station WEAf and claims to reach a potential audience of about 15,000,000 people. The stations in this network are located in New York, Boston, Portland (Me.), Philadelphia, Schenectady (N. Y.), Washington, Buffalo, Pittsburgh, Cleveland, Detroit, Cincinnati, Chicago, St. Louis, Louisville, Nashville, Memphis, Atlanta, Kansas City, Minneapolis, Davenport, Providence and Worcester. Programs are rendered in the WEAf studio in New York and transmitted to the other stations and re-broadcast from all the stations simultaneously.

The charge for using the facilities of this network is \$5,000 an hour, \$3,125 for half an hour, \$1,953.15 for a quarter-hour and \$2,500 for ten minutes. The ten-minute periods are for talks only. This is for evening programs. The daytime charge up to 6.00 p.m. is one-half this rate. There are discounts that

bring the cost down considerably on contracts running for six months or more.

The advertiser does not necessarily have to engage all the stations in the network. He may take any of them he wishes, provided they are available. The charge for the use of station WEAJ alone, after 6.00 p.m. is \$600 an hour, \$375 for half an hour, \$234.38 for a quarter of an hour.

In addition to the cost of using the facilities of a station, the advertiser must pay for the entertainment provided and, needless to say, this must be good if it is to be at all effective. If he wishes, he may assemble his own entertainers and arrange his own program, provided what he offers meets the approval of the broadcasting station.

Edgar H. Felix gives the following interesting illustration of the possible variation in the cost of reaching a radio listener.\*

In the New York area, for example, there are approximately 15,000,000 people. Assume a listening audience of 25 per cent or 3,750,000. At 8.00 p.m. on a winter evening 25 per cent or 937,000 of that number may be listening in. These listeners are divided among thirty-six stations, perhaps as follows:

Station A	28 per cent
Station B	24 per cent
Station C	16 per cent
Station D	10 per cent
Station E	8 per cent
Station F	6 per cent

and the remaining 8 per cent among thirty stations. On that basis Station A has 262,500 listeners, B—225,000, C—150,000, D—93,720, E—75,000, F—56,250 and the smaller stations an average of about

\*Advertising and Selling April 6, 1927.

2500. Now if Station A charges \$600 an hour and one of the smaller stations \$100, the cost per individual listener of the former is about 4½ cents and the latter 25 cents. So, hypothetical as our inquiry is, it brings to light rather startling information.

A study of the results achieved by the users of radio broadcasting during the comparatively short time it has been in existence, indicates that this type of advertising can be successfully employed by any advertiser, who seeks to gain good will for his company and product, and that it can be made to produce sales results, when the machinery of dealer distribution has been properly looked after, provided the product is one that requires no consumer education or one for which adequate educational advertising has been carried out by means of the printed word. In most cases of successful radio advertising, many years have been spent in building up names and reputations before broadcasting was used.

In conclusion, the following opinion, expressed by an executive of a leading New York advertising agency, is indicative of the light in which radio broadcasting is coming to be regarded in advertising circles.

"We regard radio broadcasting not as a major medium for advertising but as a very splendid secondary medium of support. We believe it is a potent factor in building friendliness for a company or product. And we believe that this matter of friendliness is becoming a very increasing factor in the making of sales.

"If a company can convince its possible customers to buy in another way or if the nature of the product is such as to require no convincing, we believe that the friendliness built up by radio broadcasting can be translated into a very real sales value."

## Peerless Seats of New Design and Construction

ON its latest models Peerless has instituted a new design and construction of cushion for the seats and backs which is intended to increase the comfort of these items of equipment. The main points of interest in the new design are that seat backs are being made without pleats and are not tufted and a generous layer of silk floss is placed over the curled hair to make the cushions still more soft.

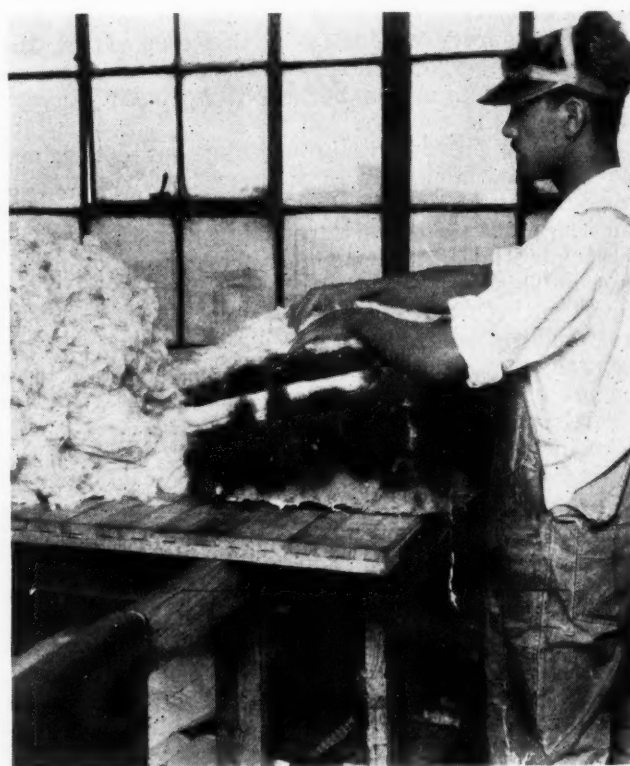
Peerless cushions are made in a production line which carries out progressive assembly in so far as a relatively small output permits. The frames arrive at one end of the cushion department where they are fitted with springs which are also assembled outside the department.

The spring-fitted frames then move to the next operator who covers the entire assembly with tautly drawn burlap which is tacked in place. Another operator fastens rolls of soft cotton in place along the edges of the cushion and in all corners to prevent sharp lines from showing through the finish fabric and also to make them more comfortable.

The next operation is to apply the curled hair, which is spread thickly and evenly over the cushioned surface. After the curled hair Peerless now applies a thick layer of silk floss as shown in the accompanying illustration. About 10 lb. of floss is used for each cushion and, when pressed down evenly but not drawn taut, this makes a layer about 4 in. thick. This silk floss is carefully distributed over the surface so that when the muslin liner is tightly drawn over the whole in the next operation the contour of the cushion closely follows a template with which all cushions are checked.

On top of the muslin liner a layer of white wadding

is placed and the fabric cover is tacked in place to complete the job.



Applying silk floss to a Peerless seat cushion



# Stabilator of Greater Sensitivity Designed for Light Cars

New Type AA spring control device introduced by John Warren Watson Co. has smaller brake drums and a higher coefficient of friction of brake shoe material.

By Donald Blanchard

**A** NEW model Stabilator, designed specifically to meet the requirements of light, short wheelbase cars and designated as the Type AA, has been brought out by the John Warren Watson Co., Philadelphia.

Fundamentally the operation of the new AA is the same as that of the larger Stabilator, in that the control force applied to the car spring is directly proportional to spring deflection, being a maximum when deflection is greatest and decreasing uniformly as the spring returns to its normal position. However, because of the more exacting requirements of the light, short wheelbase car from the spring control standpoint, greater sensitivity has been built into the device.

The increased sensitivity is due in part to the use of smaller brake drums, giving a greater variation between the maximum and minimum control forces developed, and to the higher coefficient of friction of the brake-shoe material.

The new AA is made in two sizes, the smaller being designed for front spring control and the larger for use at the rear springs. Each set of four includes two of each size. The housing diameters of the large and small models are 5 3/16 and 4 3/16 in. respectively as compared with the 5 1/2 in. diameter of the large Stabilator.

Among the new features of the AA are an entirely new brakeshoe, a positive seal protecting the interior of the device against dirt and water, and a new method of tension adjustment. In the brakeshoe used in the large Stabilator small buttons of a specially developed material are inserted in the face of the shoe to prevent squeaking and chattering. In the AA, however, this special material is impregnated in the shoe and diffused through its entire structure.

## Seal Against Dirt and Water

The positive seal is provided by a strip of rubberized fabric attached to the back of the brakeshoe. This strip is wider than the shoe so that flexible flaps are provided running the entire length of each side of the shoe. These flaps contact with the inner faces of the housing providing a seal against the entrance of dirt and water.

Adjustment of the new AA has been greatly simplified. There are three eyelets in the strap, two of which are shown in the accompanying illustration, representing light, medium and tight adjustments. To change the tension, the strap is released at the axle and allowed to run into the device or withdrawn from it until the

desired adjustment is obtained as indicated by the position of the eyelets.

In discussing the introduction of the new device, Mr. Watson expressed the opinion that there is a large potential market for the light, short wheelbase cars



New Watson Type AA Stabilator,  
designed for light, short wheelbase  
cars

among people well able to afford larger and more expensive cars. He feels that this class of owners like the ease of handling and maneuverability of the small cars but have not purchased them because they do not provide sufficient riding comfort.

Mr. Watson believes that the development of spring control methods designed specifically for the lighter cars will stimulate sales in the small car field.

**A**CCORDING to Paris advances, the President of the Argentine Republic has signed the contract which accords to the French Latecoere company the right to exploit the air service which is to connect France with the capital of the South American republic. It is expected that when this line is in operation, mail and light parcels will be carried over the distance between Paris and Buenos Aires in nine days, instead of in 21 as at present. The service will be an extension of the present Latecoere service to Senegal and will be started soon.

## U. S. Exports of Cars, Trucks, Tires and Parts

COUNTRIES	PASSENGER CARS										TRUCKS					
	Up to \$500		\$500 to \$800		\$800 to \$1200		\$1200 to \$2000		Over \$2000		Up to 1 Ton		1 to 2½ Tons		Over 2½ Tons	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
Austria	2	\$1,074	11	\$7,449	27	\$22,301	15	\$19,449	8	\$17,601	4	\$3,106				
Azores and Madeira Islands	17	7,216	30	18,259	8	6,491	6	7,193					1	\$711		
Belgium	783	349,600	2,263	1,268,507	2,205	2,040,234	1,165	1,491,844	239	553,850	2,309	992,540	8	11,330		
Bulgaria	3	1,154	1	708	18	15,627	1	1,237			2	606				
Czechoslovakia	50	19,962	100	62,986	105	95,987	33	41,838	18	40,702	51	18,254				
Denmark	5,552	1,870,689	3,644	1,884,916	1,867	1,571,226	516	614,742	44	108,836	4,544	2,030,182	26	28,325		
Estonia					3	2,348					3	3,040				
Finland	16	7,798	357	221,231	754	665,839	436	528,977	106	216,982	54	44,948	87	117,068	4	\$12,600
France	3	1,372	29	19,246	231	221,671	234	286,962	120	280,521	87	41,360				
Germany	554	102,302	806	517,468	2,737	2,465,075	716	885,781	486	1,274,197	192	84,178	32	33,436	1	6,850
Gibraltar			1	880	2	1,760					1	2,500				
Greece	469	180,920	110	61,353	47	37,095	25	31,298	10	27,437	157	53,673	6	6,702		
Hungary	5	2,285	38	20,818	65	55,167	44	55,093	2	3,405	1	1,121	7	10,028	1	2,383
Iceland			3	1,971	4	3,356							2	2,270		
Italy	247	83,775	67	25,166	53	46,470	43	56,850	9	31,449	172	45,294	3	3,227		
Latvia			1	879	46	37,996	4	4,501	2	4,600			6	5,757		
Lithuania			6	3,801	3	2,680					1	2,264				
Malta, Gozo and Cyprus Is.	1	496	11	7,652	18	15,204	7	7,947								
Netherlands	3	537	443	269,315	506	449,141	363	467,581	88	219,372	8	8,564	52	84,784	1	5,580
Norway	31	12,473	292	168,778	324	269,407	199	243,159	40	85,076	31	23,153	110	140,462	3	10,406
Poland and Dantzig	2	936	80	47,822	110	96,499	23	27,713	4	12,048						
Portugal	99	42,107	264	148,043	179	151,613	110	127,611	10	24,457	243	115,899	30	35,285	1	2,200
Rumania	550	201,412	178	103,219	237	201,596	140	155,349	47	111,851	666	227,773	10	13,013	2	4,800
Russia	2	710			6	5,106					83	44,821			3	24,344
Spain	156	68,702	978	591,760	1,282	1,143,124	909	1,177,159	343	818,738	1,495	698,140	174	197,472	2	5,351
Sweden	31	14,901	1,359	827,437	1,427	1,221,101	627	762,554	126	268,335	108	81,258	241	286,166	6	6,042
Switzerland	59	27,201	69	46,254	116	109,586	172	225,155	95	221,256			3	3,585		
Turkey	65	21,897	121	65,299	105	88,509	36	42,569	13	27,925	108	48,875	5	9,247		
United Kingdom	417	187,857	3,548	2,245,70	2,15	1,834,792	388	525,083	328	815,000	2,755	1,181,492	55	65,346	6	6,714
Irish Free State			10	19,392	33	27,413	9	10,183			11	7,105	5	6,317		
Yugoslavia	32	15,233	36	22,086	68	59,008	25	26,857	8	20,100	2	923	4	7,020		
United States																
British Honduras	4	1,400			1	1,009	4	4,892			2	913				
Canada	1,764	503,021	13,114	7,519,764	4,519	4,404,279	2,300	3,283,873	731	1,955,732	776	502,376	1,303	1,888,387	153	579,499
Costa Rica	13	5,064	25	17,449	81	68,555	39	43,936	10	22,583	23	16,014	14	20,178		
Guatemala	3	854	15	10,123	69	66,826	62	75,902	18	39,857	26	14,240	61	76,425	1	5,305
Honduras	20	6,739	8	5,069	16	14,069	4	5,140			33	23,493	6	6,018	3	6,000
Nicaragua	4	1,808	3	2,090	21	19,788	1	1,850			7	3,169	1	3,245	3	15,570
Panama	225	85,498	60	36,990	98	96,337	55	66,185	10	20,717	306	122,358	22	27,612	39	160,616
Salvador	4	1,506	28	19,278	74	63,923	24	30,797	22	52,795	27	12,810	12	28,689	5	14,127
Mexico	1,565	584,471	786	483,301	592	540,057	228	311,511	68	167,357	878	450,715	235	345,833	41	166,646
Miquelon											4	1,525	1	425		
Newfoundland	17	2,733	88	53,016	70	58,218	48	56,808	1	1,663	10	4,739	1	1,357	1	4,117
Barbados			7	5,205	13	12,477	3	3,407								
Jamaica	81	26,885	128	74,612	87	77,352	23	29,677	5	10,045	135	51,558	21	23,434	2	4,263
Trinidad	3	1,550	4	2,650	43	36,681	7	8,493			8	5,884	19	22,246	4	15,592
Other British West Indies	61	18,437	10	5,672	14	12,337	6	8,386	3	8,155	42	13,710	48	54,674	1	800
Cuba	1,057	376,461	1,053	531,655	370	327,792	170	227,120	98	267,542	825	325,704	131	163,112	86	358,138
Dominican Republic	121	51,932	130	70,855	54	51,701	22	29,127	17	43,356	78	34,367	37	79,956	1	4,348
Dutch West Indies	14	5,226	7	4,382	29	27,618	18	20,671	2	3,426	67	30,918	4	3,349	4	13,080
French West Indies	8	3,018	3	1,466	2	1,657					11	3,861				
Haiti	7	2,590	23	16,472	24	20,059	8	9,124			20	8,382	5	7,064	1	4,142
Virgin Islands	13	4,420	3	1,629	1	1,000	1	1,300			4	1,546				
Argentina	9,724	3,570,992	3,950	2,395,555	3,718	3,191,682	1,150	1,416,204	351	840,950	2,977	1,301,539	325	539,464	234	589,545
Bolivia			4	2,747	16	15,641	30	39,085	17	44,778	4	3,690	14	23,604	1	4,616
Brazil	4,329	1,630,381	1,590	1,045,007	2,467	2,056,459	699	800,487	205	463,735	5,135	2,220,042	468	342,121	19	57,312
Chile	625	138,506	141	89,421	210	181,473	121	147,913	47	111,383	436	132,304	95	150,654	30	85,616
Colombia	134	50,268	112	77,885	352	317,177	204	254,282	84	233,483	211	133,757	386	629,841	58	154,365
Ecuador	23	8,132	20	12,007	17	15,028	20	24,073	9	13,641	17	8,090	5	7,563		
British Guiana	96	35,775	2	1,365	7	5,658							2	2,285		
French Guiana																
Dutch Guiana	9	3,529			1	1,021	4	6,100			3	1,005				
Paraguay	16	5,616	8	5,292	8	6,331	5	5,393			65	20,430	4	4,637		
Peru	226	85,382	105	61,127	146	128,648	38	48,185	6	13,264	275	118,706	130	239,376	3	6,414
Uruguay	794	308,505	448	259,860	378	338,691	138	171,306	48	132,235	304	118,100	79	197,496	28	99,062
Venezuela	405	137,862	172	124,360	429	366,338	225	271,052	62	147,955	354	158,698	127	212,306	33	101,285
Aden	21	10,285	18	9,869	11	8,579					2	640	3	2,826		
British India	10	3,731	430	264,289	1,155	966,410	114	134,435	23	49,036	713	479,466	85	89,651	1	5,900
Ceylon	1	581	57	35,777	222	200,931	28	35,076	3	6,848	91	62,479	63	81,722	1	2,755
Straits Settlements	26	13,834	222	135,109	218	186,040	61	67,653	7	16,759	15	10,721				



## Canadian Exports

Electric Vehicles		PARTS		TIRES						PASSENGER CARS						TRUCKS		PARTS		COUNTRIES	
				Casings		Inners		Solids		Up to \$500		\$500 to \$1000		Over \$1000		No.	Value				
No.	Value	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value			
		\$35,412	9,688	\$132,792	7,635	\$19,390	29	\$1,402													
		6,967	610	7,706	262	535															
		674,277	10,262	136,419	2,841	7,084	70	2,010	4	\$1,050	13	\$9,762	8	\$9,154			\$9,068				
		2,305	607	8,313	647	1,381			12	5,015	4	2,334	3	3,418	22	\$8,518					
		35,066	13,082	264,354	4,059	11,457	1,636	65,274													
		1,452,284	73,321	833,362	43,575	65,377	187	6,375			5	4,721	47	53,985			10,769				
		2,685	882	12,544	1,130	2,501	84	3,091													
		165,252	10,093	165,555	7,939	20,431	20	735	48	22,292	97	54,860	50	57,804			432				
		464,975	12,120	187,308	5,702	15,540	46	1,572	16		16	11,252	2	3,461			6				
		2,876,962	81,877	1,191,711	37,687	95,476	29	1,487	7		7	5,105	149	203,291			27,115				
		2,399	28	321	6	27															
		67,411	9,848	116,486	1,526	3,730	309	9,547			1	554			2	774	432				
		24,635	675	8,508	289	811	16	489	1	499	1	693									
		1,688	339	4,785	263	439											34				
		309,563	8,725	100,517	4,901	11,379	121	2,913	11	4,659			5	6,043							
		1,293	467	8,141	155	270															
		660	397	4,489	387	725															
		3,001	273	3,915	196	330	12	275	93	34,934	9	5,606	3	3,460	30	11,248					
		382,916	31,076	525,176	13,608	32,159	1	38	7	3,215	27	15,207	1	1,010			1,450				
		99,111	10,886	203,299	9,152	21,310	278	13,956	162	78,188	113	69,868	46	50,524			974				
		7,096	13,731	165,947	10,298	16,291	30	1,047			3	2,272	5	5,715							
		98,565	9,364	112,005	4,257	8,029	86	2,346			2	1,893									
		73,325	11,947	122,644	10,296	21,061	30	2,038	485	208,206	39	23,756	49	55,462	146	56,573					
		94,709	254	3,348	594	1,227											15				
		867,592	39,980	516,538	24,954	57,010	2,631	87,276			1	944	2	2,320			207				
		433,369	48,025	726,386	25,457	59,195	29	1,442													
		49,822	15,673	281,967	9,983	41,738	214	10,459	19	9,147	23	14,226	6	6,628			50				
		33,283	2,145	24,261	418	963	70	2,764	23	9,586			1	1,486							
12	\$33,450		153,068	1,970,839	83,944	167,448	11,914	271,479	1,121	336,379	2,170	1,591,143	829	1,026,484	294	84,275	155,087				
		189,611	1,693	17,444	175	380	82	1,989									4,270				
		7,083	3,970	43,621	3,052	6,422	139	5,262	134	54,852			9	10,602	40	15,534	472				
									51	10,495	8	5,102	3	4,775	2	1,657	100,915				
									1	410	5	2,704	2	2,444			6				
23	43,343		121	1,185	126	246			31	11,793	13	6,704	3	3,188	83	32,019	123				
		23,537,756	14,069	198,405	25,115	47,376	595	21,422	16	6,795	11	7,319	10	11,441	42	15,987	148				
		30,515	2,427	36,981	1,517	3,974	38	1,647													
		94,895	3,622	72,641	3,406	9,579	24	804													
		15,450	708	10,822	718	1,536	134	6,568													
		11,813	407	5,699	486	1,184	34	2,065			3	1,458	3	2,820	4	4,679	39				
		178,073	9,045	99,329	5,395	10,377	610	14,740	74	30,360	4	2,283	27	32,018	99	38,568	319				
		41,148	2,001	35,165	2,069	5,693	270	10,853	10	4,052	2	1,124			4	1,549	21				
10	9,669		47,408	540,525	37,429	71,447	1,017	30,217	12	4,292	12	10,623	9	11,342			50				
		113	4	158							1	526					835				
		12,364	1,150	13,749	1,511	2,633	26	985	12	3,912	21				11	3,479	2,635				
		16,897	352	3,221	244	454	34	1,040	30	10,726	21	15,443	2	2,040	15	4,631	548				
		98,646	613	9,189	279	760	460	12,253	250	91,317	52	39,317	21	22,531	80	31,080	11,041				
		50,824	1,212	18,348	463	1,054	29	973	90	31,267	33	22,249	7	7,878	116	38,071	808				
		31,093	485	5,785	291	563	46	894	51	19,816	19	11,630			9	3,579	392				
		529,954	66,790	616,581	36,037	57,993	5,739	170,990			2	1,707	34	38,963			349				
		56,461	5,874	80,425	3,183	7,905	253	8,110	2	958	5	4,454	5	6,000							
		28,201	2,113	26,809	2,424	5,007	2	34	16	6,707	5	3,482	1	1,176	14	5,422	55				
		4,054	217	4,570	160	365	10	408	14	5,810	2	1,791			2	774					
		37,025	2,205	39,752	2,316	5,626	28	1,104	48	19,493	2	1,100			4	1,549					
		5,478	193	1,908	255	369	56	1,653													
2	3,206		159,838	1,661,530	90,156	160,061	4,487	127,338	378	178,094	425	307,624	91	106,889			386,263				
		1,434	1,305	26,251	1,105	2,972	2	119	7	2,901	2	1,124	4	5,031	54	20,907	13				
		1,854,133	107,766	1,123,179	42,451	86,214	1,124	39,105	63	30,008	501	438,759	147	158,336			118,176				
		459,048	17,227	290,017	12,160	24,545	609	21,818	148	65,671	57	40,241	35	41,644	136	51,755	694				
1	574		12,871	255,395	13,805	41,487	262	15,181	183	75,606	37	32,380	80	93,907	446	180,184	3,179				
		14,652	1,619	23,530	1,724	3,602	72	2,793	2	810	8	6,990	7	7,952	10	3,872	22				
		11,459	193	2,614	70	115			36	14,449	13	8,203	3	3,192	20	5,100	1,320				
		506																			
		1,818	117	980	92	137	19	436	1	412							70				
		11,961	1,503	16,618	1,281	2,433			100	4,292	7	6,255	4	4,441	34	13,164					
		233,066	10,213	184,084	7,034	19,938	187	5,335	100	41,869	20	11,804	10	13,953	152	59,161	243				
		372,786	17,900	193,213	8,423	11,329	500	21,852	178	86,511	26	19,864	27	34,287			1,061				
		330,044	15,788	241,002	12,598	31,178	65	2,659	201	107,710	32	23,603	13	14,834	424	164,058	65				
		5,073	238	2,057	246	373			26	7,817	16	11,610			14	3,818	4,880				
		573,227	48,088	620,022	15,384	28,550	2,138	65,341	2,872	1,150,192	390	280,139	112	122,676	3,131	1,055,452	191,674				
		62,799	5,097	73,392	2,652	6,781	338	11,125	284	121,141	58	42,853	12	13,175	211	68,563	5,344				
		220,393	27,189	240,067	1,622	3,595	1,046	23,186	595	223,564	74	52,696	3	3,339	370	108,732	128,615				
1	1,768		198,061	10,206	109,224	4,975	9,154	227	6,087	12	5,493	141	124,031	28	39,473	8	3,093	1,122			
		284,474	29,039	316,330	9,976	18,899	487	18,655	1,064	363,682	364	318,733	122	142,867	509	149,331	87,522				
		78,726	5,423	65,021	3,732	6,299	10	189													
		913	10	233	12	54															
		30,920	1,380	16,278	623	1,196	36	1,052	86	36,450	3	1,662			176	67,868					
		53,949	94	1,696	150	318	12	450			8	5,701	1	1,458							
6	6,780		2,937,183	47,297	418,467	29,552	42,820	3,999	258	103,365	213	192,310	29	38,231	65	25,115	43,362				
		20,284	10	53																	
		72,694	4,662	62,533	2,423	5,539	4	119			4	1,940					74				
		53,563	2,360	43,359	1,690	5,236	492	16,809	12	5,071					40	15,542					
		368,718	59,723	734,743	64,833	137,805	2,849	72,647									429				
		20,298	116	3,509	432	968															
		40,188	4	63	4	11			14	5,405			2	2,172	360	106,895	23,170				
		25,863	2,096	20,672	2,356	3,973	18	634	5	2,084											

# AUTOMOTIVE **NEWS SECTION** INDUSTRIES

Philadelphia, Pennsylvania

Saturday, September 3, 1927

## Production Gains in August Despite Inactivity of Ford

PHILADELPHIA, September 3—Production of cars and trucks during August will show an increase of at least 10 per cent over the July total, this despite the fact that Ford Motor Co. has been completely down so far as manufacturing complete cars is concerned. Some few Fords have been turned out in the assembly branches of the company, making up a very small part of the month's output.

There is increasing indication that the Ford contribution to the industry output in the latter months of the year will be small, the company probably not arriving at any real large production basis until November. The first of the new cars will not come off the lines until September is well advanced and a rate of little more than 1000 daily is looked for in the late month and in October.

Unless the new car proves to be a sensation and is offered at a price warranting buyers in waiting months for deliveries, it is not likely that the business of other small car manufacturers will be seriously affected this year. In the meanwhile sales of cars in practically all classes are at a much improved rate and promise to continue high through the present month.

Reports from leading trade centers indicate a sharp upturn in buying during August. Deliveries of some new model cars continue to be several weeks behind in many sections. The most marked change in buying sentiment has been noted in the smaller communities of the South and Middle West.

## G.M. Rumor Booms Midland Steel Stock

CLEVELAND, Aug. 31—Well-defined rumors that interests close to General Motors are attempting to obtain control of the Midland Steel Products Co., Cleveland, largest manufacturers of frames in the world, are responsible for the recent sensational flight of Midland securities, it was learned here. The participating preferred rose recently from 109 to 140%. E. J. Kulas, president of the company, said he and other officials were "in the dark" as to the identity of the interests which have been buying the stock.

## Pontiacs Pass 100,000

DETROIT, Aug. 31—Oakland Motor Car Co. has produced more than 100,000 Pontiac cars so far this year or 24,000 more than were sold in the entire year 1926. Factory also reports unprecedented demand for new Oakland and predicts that new production records will be set up for Oakland cars.

## National Air Lines is Second Largest

NEW YORK, Aug. 29—When the National Air Transport, Inc., on Sept. 1 takes over the New York to Chicago division of the transcontinental air mail route, it will become second in the world only to the Lufthansa of Germany, as a private operator of commercial aircraft.

The N. A. T. will operate 36 planes on a daily flying basis of 5000 miles. From New York to Chicago, with stops at Cleveland, there will be 18 Douglas biplanes equipped with Liberty engines in a 7½ hr. service. It is the plan of the N. A. T., through an arrangement with the American Railway Express, to carry express matter as well as mail.

From Chicago to Dallas the company will have Travelair monoplanes equipped with Wright whirlwind engines in service. There will be accommodations for three passengers on these planes as well as mail and express. Passengers will be carried at the rate of 10 cents a mile or \$100.30 for the trip from Chicago to Dallas. It is planned later to carry passengers between New York and Chicago.

## Survey American Highways

NEW YORK, Aug. 31—Highway surveys covering the Western Hemisphere have been forwarded to the headquarters of the International Association of Automobile Manufacturers in Paris. The surveys were made by the world motor transport committee of the international association in cooperation with the U. S. Bureau of Foreign and Domestic Commerce, Canadian Department of Highways and the highway committee of the National Automobile Chamber of Commerce.

## Prince to Open Glasgow Show

Washington, Sept. 1—The Glasgow (Scotland) automobile show and the Scottish Motor Show will be held at Glasgow from Nov. 4 to Nov. 12, the Department of Commerce is informed. The show is second in importance to the London show and will be opened this year by the Prince of Wales.

## Citroen Inaugurates Time Payment Plan

WASHINGTON, Sept. 1—The French Citroen company, leading automobile manufacturer in that country announces the inauguration of a time-payment plan of purchase on all Citroen cars, payments being either on a 12 or 18 months basis, the initial payment being \$246 and monthly instalments of \$54, according to cable to the Department of Commerce. A substantial reduction was made in the price schedule three months ago.

## San Francisco to Stage Big Equipment Exhibit

SAN FRANCISCO, Sept. 1—Nearly double the space ever before devoted to equipment at a Pacific Coast automobile show will be given over to this department at the annual show here next winter, according to George Wahlgreen, general manager of the Motor Car Dealers' Association of San Francisco. Cooperative exhibits of equipment, accessories and service machinery and equipment will be made by virtually all of the jobbers of San Francisco, and automobile dealers, garage and repair men, and service-station operators will be given an opportunity to participate in this, the first exhibit of its kind to be held here.

Hitherto, the equipment men have been limited to comparatively small space in the halls and alcoves of the automobile shows on the coast. Now they are to be given the chance to impress on the public the benefits and satisfactions to be derived from proper equipment, and the patronage of the completely-equipped repair shop.

## Offers G.M. Preferred

NEW YORK, Aug. 31—Private offering today by J. P. Morgan & Co. of a block of 50,000 shares of General Motors Corp. 7 per cent preferred stock at \$124.75 a share did not represent new financing nor is General Motors Corp. concerned in the offering. The stock was acquired from private holders by the bankers. At the offering price the return on the stock is 5.61 per cent.

## Willys Gains in Canada

TOLEDO, Aug. 30—Fifty per cent gain in Canadian sales of Willys-Overland cars has necessitated expansion of the Toronto plant. An additional building there will be provided. Big gain in sales have been made this year and future looks good, according to officials.



## Speedway Buys Cars for Stock Car Races

### Takes Step to Insure Thorough Representation in Special Class Events

PHILADELPHIA, Aug. 29—The management of the Atlantic City Speedway has purchased cars of eight leading makes which it will race in the regular stock car events scheduled for Labor Day races. This step has been taken by the speedway officials to insure a thoroughly representative field in each of the stock car events.

In the 25-mile event limited to four-cylinder cars the following cars will race: Dodge, Star, Chrysler, Chevrolet and Whippet.

Cars in the 75-mile race for six-cylinder cars under \$2,000 are: Studebaker, Star, Chrysler, Nash, Buick and Hudson.

In the 150-mile free-for-all for six and eight-cylinder cars listing over \$1,500 are: Stutz, Nash, Buick, Auburn, LaSalle, Chrysler 72 and 80, Duesenberg, Packard, Hudson and Studebaker.

The cars will be conditioned for the races by the management and will be driven by expert racing drivers. All cars will be checked by the contest board of the American Automobile Association. Pit crews to handle the cars have been selected from professional racing ranks.

A special event for veteran cars will precede the stock car races.

### New England Interests Set Aviation Conference

NEW YORK, Aug. 29—Leading commercial interests in New England will join with representatives of air service operators and airplane manufacturers in an aviation conference to be held in the Hotel Statler, Boston, Sept. 30, under the auspices of the committee on public relations and community organization of the New England council. The conference will coincide with an aviation show to be held in the Mechanics Building, Boston, during the week of Sept. 26 to Oct. 1.

### Moto Meter Directors Take Dividend Action

NEW YORK, Aug. 31—Directors of the Moto Meter Co., Inc., today declared the regular quarterly dividend of 90 cents on class A stock. The quarterly dividend of 25 cents on the class B stock due at this time was omitted. The B stock is held entirely by officials and the dividend on this stock was omitted to conserve cash and further safeguard the dividend on the A stock.

George H. Townsend, president of the company said:

"Our earnings, while lower than last year, have more than covered dividend

requirements in spite of having charged off \$173,000 in the first six months to introduce and develop the new self-adjusting spark plug, the success of which seems assured.

"Up to Aug. 1 we sold 1,175,000 Boyce Moto Meters, compared with 1,444,000 last year, notwithstanding that there has been virtually no Ford outlet during the past four months.

"Our subsidiary, National Gauge & Equipment Co. has shown a marked improvement in earnings during this year and to take care of the increased demand for its production large expansion has been required. Our cash position is approximately \$1,000,000 in the treasury of the Moto Meter Co., Inc., as well as \$200,000 in the treasury of National Gauge & Equipment Co."

### Watson Recapitalizes Has New Stabilator

PHILADELPHIA, Aug. 31—An offering of 200,000 shares of common stock of the John Warren Watson Co. was subscribed through Hornblower & Weeks in a recapitalization which will bring the authorized stock to 650,000 shares of common stock and 450,000 shares of deferred common stock both of which are without par value. The offering of the new stock was at \$24.50 a share.

Common shares are entitled to receive dividends at the rate of \$2 a year in excess of any dividends on deferred shares. The common and deferred have equal voting rights. Deferred shares are convertible into common, share for share, upon the following conditions: 150,000 shares or any number of them, may be converted accordingly as net earnings for 1927, or any year thereafter, are equal to \$3.50 a share on the sum of the then outstanding common shares plus the deferred shares so convertible. Similar conversion may be made as profits equal \$3.75 a share and \$4. All the deferred shares will be taken by John Warren Watson and his associates in the company.

The company is about to announce a new stabilator selling at \$28 a complete set, and designed especially for light, short wheelbase cars. The company is preparing for a 200 per cent expansion of its business. Management and control of the company will continue to be in the hands of John Warren Watson.

Net sales of the company in the first half of 1927 were \$2,031,374 with net profit after all charges of \$401,082. Sales in all of 1926 totaled \$3,335,271 and profits, \$577,450.

### Chevrolet Sales High

DETROIT, Aug. 31—Sales of Chevrolet cars in August will be most gratifying, according to R. H. Grant, vice-president in charge of sales. A total of 48,500 Chevrolets were merchandised in the first 20 days of the month, which indicates sales for August of approximately 75,000 units. Mr. Grant is very optimistic over the outlook.

## Business in Brief

Written exclusively for AUTOMOTIVE INDUSTRIES by the Guaranty Trust Co.

**NEW YORK, Sept. 1**—During the past week general business activity has remained at an even rate. Iron and steel operations are below levels maintained at this time last year in consequence of smaller demand from the automotive, railroad and oil industries. The price situation of the major crops, however, has strengthened the belief that a higher purchasing power in the agricultural sections will be the basis for a brisk fall trade. Money in this country continues to be plentiful, though a stiffening of rates is expected as soon as the demands for funds for crop-moving purposes become more urgent. Sterling has reached a new high for the year.

### FREIGHT CAR LOADINGS

Railroad freight car loadings for the week ended Aug. 13 numbered 1,049,280, as compared with 1,024,218 in the previous week and 1,102,660 in the corresponding period last year. Total loadings for the year to date amount to 32,335,621 cars, against 32,400,962 cars in the like period of 1926 and 31,390,575 two years ago.

### PETROLEUM PRODUCTION

A further drop in production of crude petroleum was registered in the week ended Aug. 20, average daily output for that period being 2,518,400 bbl., which compares with 2,575,550 bbl. a week earlier and 2,170,500 bbl. in the like period of 1926.

### FISHER'S INDEX

Professor Fisher's index of wholesale commodity prices rose to 142 last week from the figure of 139.9 for the week previous. Four weeks earlier the index stood at 139.5.

### BANK DEBITS

Bank debits to individual accounts, as reported to the Federal Reserve Board for the week ended Aug. 24, were 10.7 per cent below the level reached in the preceding week though 8.6 per cent greater than the total reported in the corresponding period last year.

### FEDERAL RESERVE REPORT

For the same period the Federal Reserve banks reported increases of \$8,700,000 in reserves, \$23,700,000 in bills discounted, \$7,900,000 in bills purchased in open market, \$3,300,000 in U. S. Government securities, \$6,300,000 in Federal Reserve notes in circulation, and \$6,900,000 in deposits.

Member bank discounts declined \$65,534,000, investments \$7,801,000, and demand deposits \$116,551,000, while borrowings from the Federal Reserve banks rose \$21,310,000.

The quotation for call money ruled unchanged at 3½ per cent during the past week. Time money and commercial paper rates remained at 3½ to 4 ¾ per cent and 3¾ to 4¼ per cent, respectively.

## Industry Excise Tax \$66,437,881 in 1927

Total Shows Reduction of 50  
Per Cent From Collections  
in Previous Year

WASHINGTON, Sept. 1—A total of \$66,437,881 was collected from the automobile industry during the fiscal year of 1927 in the form of excise taxes, according to internal revenue receipts announced this week. The sum collected in 1927 is approximately half that collected in 1926 when the total revenue from automotive excise sources aggregated \$138,155,194. The total internal revenue collections, from all sources was \$2,865,683,129, compared with \$2,835,999,892, or an increase of \$29,683,000.

Segregating the manufacturers' automotive excise taxes a comparison of the two years shows that there was a tax of \$113,133,245 collected on automobiles and motorcycles in 1926, compared with \$66,437,881 this year. The truck tax which was eliminated this fiscal year netted \$6,817,099 last year, and the tires, parts and accessories taxes, also eliminated this year, yielded \$18,204,849 in 1926.

The states reporting the largest collection of taxes from automotive sources in 1927 were as follows:

Michigan .....	\$48,022,543
Ohio .....	5,647,979
Indiana .....	4,059,415
Wisconsin .....	3,110,505
New York .....	1,676,799
Missouri .....	1,000,236
New Jersey .....	725,286
Illinois .....	679,476
Pennsylvania .....	655,240

The report shows that during the two past fiscal years 25,480 claims were filed by garages, dealers, jobbers, retailers, wholesalers, and automobile and accessory manufacturers for refunds of illegally collected automobile taxes, claiming a total refund of \$3,777,524, which was allowed. The amount claimed, which was disallowed, is not indicated by the reports.

## Half of Express Assets in Automotive Equipment

WASHINGTON, Sept. 1—Approximately half of the entire physical assets of the express companies of the country are represented by automobile equipment, according to a preliminary abstract of statistics made to the Interstate Commerce Commission by the common carriers of the country for the year 1926.

The total value of the real and personal property of the American and Southeastern express companies as of Dec. 31, 1926, was \$44,999,705, and of this sum \$16,552,864 was invested in automobiles; \$2,346,144 in trucks, and \$454,579 in garage equipment. The unit number of automotive equipment of the two companies is not indicated in the reports.

## Carolina Bus Men Improve Equipment

CHARLOTTE, N. C., Sept. 1—Motor bus travel now is at the highest point in the history of this phase of the transportation industry in North Carolina, according to information obtained here from Joel W. Wright, of Gastonia, N. C., president of the Carolina Motor Carriers Association, and other leading operators of bus lines. The bus lines' period of expansion is at an end for the present, however, and all investments of new capital are being made in better equipment.

## Tire Sales Volume \$399,598,000 in Half

NEW YORK, Aug. 29—Total sales value of tires and tire sundries manufactured in the United States in the second quarter of 1927 was \$211,948,000 against \$237,936,000 in the corresponding period of 1926, according to the Rubber Association of America, Inc. For the first half-year the total sales value of these products was \$399,598,000 against \$418,769,000 in the first six months of 1926.

Crude rubber consumed in the manufacture of all rubber products in the second quarter was 94,983 tons against 80,140 tons in the second quarter of 1926. The half year's consumption is thus brought to 186,282 tons against 166,897 in the first half of last year. These figures are estimated to be 92 per cent of the total for the industry.

Crude rubber on hand in the United States at the end of the second quarter of this year was 84,811 tons against 82,233 at the end of the first quarter and 59,254 on July 1, 1926.

## Frost Renamed President of Gear Manufacturers

CLEVELAND, Aug. 27—The semi-annual convention of the American Gear Manufacturers' Association will be held in Montreal, Canada, Oct. 21, 22, 23, the executive board of the association has decided here. E. J. Frost, Jackson, Mich., was reelected president of the association. The following officers were also reelected: A. F. Cooke, Pittsburgh, first vice-president; B. F. Waterman, Providence, R. I., second vice-president, and C. F. Goedke, Chicago, treasurer. T. W. Owen, Cleveland, has been secretary.

## Auburn 3 Weeks Behind

AUBURN, IND., Aug. 30—The new convertible Auburn cabriolet has proven so popular with the trade the factory is three weeks behind in production, on the 8-38 model, according to a statement by N. E. McDarby, sales manager.

## Tax Change Hearing to Open October 31

Joint Committee Will Hear  
Voluntary Witness Only  
—Industry Asks Dates

WASHINGTON, Sept. 2—The automobile industry will have its initial opportunity to present data to the joint Senate and House ways and means committee, for repeal of the 3 per cent excise tax on passenger cars, the week beginning Oct. 31, when the committee will begin public hearings on proposed changes in the tax law. The date for the hearings was definitely announced by Rep. William R. Green, chairman.

The committee will hear representatives of the Department of the Treasury on the first day, Mr. Green said, and thereafter will hear other persons who may desire to present arguments for or against proposed tax changes. The order in which the various classifications of taxes will be taken up will be determined by vote of the committee.

Mr. Green expressed the opinion that the work of his committee prior to the convening of the Seventieth Congress the first Monday in December, would not be materially impeded by the fact that the Senate failed to act upon a joint resolution which would have given the committee authority to sit during the interim between Congresses. Only voluntary witnesses will be heard, he said, thus obviating any possibility of a challenge to the committee's authority to sit.

No definite date will be assigned to the representatives of the automobile industry to be heard before the committee meets, the chairman said. Application to be heard, however, has already been received from the National Automobile Chamber of Commerce and the Automobile Body Builders' Association.

## Takes Over Keaton Tire

SAN FRANCISCO, Sept. 1—The Rubber Corp. of America, organized last May by San Francisco interests, has obtained control of the plant and production of the Keaton Tire & Rubber Co. here. The Keaton non-skid tire has been on the market for 17 years, and A. L. Clark, president of the rubber corporation, announced at the end of August that a sales and advertising campaign will be conducted immediately in the three Pacific Coast states. Robert H. Keaton, who originated this tire, remains in charge of production under the new ownership.

## Logeman to Add Unit

MILWAUKEE, Aug. 29—Logeman Bros. Co., manufacturer of hydraulic and mechanical type scrap-metal presses, contemplates the erection of several additions to its works to bring output equal with orders.



# Ford to Make Tires on Volume Basis

## Output of 2500 Casings Daily Seen Part of New Car Program

Will Expand Tire, Battery and Other Departments to Utilize Space Made Available at Highland Park Plant, Developments Indicate.

DETROIT, Aug. 30—Manufacturing space made available in the Highland Park plant of Ford Motor Co. through the removal of departments to Fordson is to be used for large scale production of tires, recent developments indicate. Production ranging as high as 2500 tires daily is looked for as an early development of tire manufacturing experiments which the company has been making since early this year.

In recent months tire production by the company has risen as high as 500 daily as experimentation went forward, the later product being used as equipment on cars. No statement was made by the company that it was using its own tires as part of the regular tire equipment and the fact escaped attention in view of the large production and wide distribution of the cars.

As part of the Highland Park plant utilization program, the Ford company also will develop its battery manufacturing division, its upholstery materials division and other departments in which it has made part of its supplies, it is indicated. Most of these departments, established originally as a check on prices the company was paying for supplies bought, have been developed into important supply units within the company.

### Ford Cords on 15,000,000th Car

When Henry and Edsel Ford posed for photographs with the 15,000,000th Ford this summer, Ford tires were conspicuous on the car. Like the tires used on some of the cars released to the public, they bore the name "Ford Cord" embossed in large letters a number of times to form the non-skid tread. Being equipped with Ford tires, practically everything on the car was made exclusively by the Ford organization.

For years the Ford company has been striving to gain control of its own sources of supply for various units and Henry Ford has been reported as anxious to control his tire source. This it is argued is all the more reason why his company will become a big factor in the tire industry. He has been gathering up large stocks of junk tires from Detroit tire stores and the rubber from these is being reclaimed, it is reported.

The Ford company has also been manufacturing storage batteries at Highland Park and this activity has been increased, it is said, until the company is in a position now to fill about

half of the Ford company's battery requirements. In the past the Ford company has had large contracts with a number of woolen mills to weave the material used in upholstering cars in addition to upholstery woven in the Ford plants. This activity may also be increased at Highland Park, it is reported.

While the plant is practically closed down for the change necessary for the new model, many alterations are being made in the mammoth power house which is the show place of the Ford organization.

### Akron Makers See Ford Important Tire Producer

AKRON, Aug. 30—While Akron rubber factories have orders booked in substantial volume for tires to equip the new Ford cars, it is reported here that the Highland Park plant soon will be producing casings and tubes on a fairly large scale. Several months ago advices from Detroit were to the effect that Henry Ford's manufacture of tires was emerging from the experimental stage. Now he is believed to be ready to launch himself as an important factor in the tire manufacturing field.

About 500 tires a day were being produced at the Ford plant earlier this year. With the completion of experiments, the tire division was ready to expand operations on a basis of 2500 casings a day. That there has been some expansion of Ford's tire manufacturing operations is practically certain. The consensus in Akron, however, is that leading rubber manufacturers will continue to supply the bulk of Ford's requirements for some time to come.

### Checked Costs of Manufacture

Ford's tire-making activities in the past have been regarded largely as representing means of checking tire costs so as to buy his original equipment cheaply. The Ford company is finding it economically advantageous to produce its own tires in increasing number, it now appears. At the Highland Park plant in Detroit, Ford has one of the most compact, best equipped and most efficient tire factories in the country. It is arranged like other Ford divisions with machine-like precision in every operation and machines of exclusive design are used.

### Ford Builds Depot for Plane Passengers

DETROIT, Aug. 29—A passenger depot for air travelers is being erected at the Ford Airport at Dearborn. It is believed to be the first depot of its kind ever constructed. The building will be leased by the Stout Air Services, Inc., who will utilize it for a ticket office on the Cleveland run and also to accommodate passengers awaiting trips on sight-seeing tours.

## Production Started On New Car Parts

DETROIT, Aug. 29—Parts for the new Ford car are now in production on a limited scale in the various Ford shops but the new car has not, as yet, been placed on the final assembly line.

Ford Motor Co. has again reserved a large space at the Michigan State Fair, which opens Labor Day, and a report is now going the rounds that Ford may see fit to place the new job on exhibition at that time. If such a decision is reached it is said that the car will be a sample and that dealers will not be provided with demonstrators until later.

The assembly line in the Highland Park plant has been moved to the Fordson plant, it is reported. Space formerly occupied by the final assembly at Highland Park will probably be given over to the manufacturer of certain units of the Ford car. Such action would be in keeping with a program which the Ford company is understood to have had in mind for some time. Some months ago the company began the manufacture of tires and batteries at Highland Park and it is very likely that the company has some very definite plans for other operations at Highland Park.

### To Move Executive Offices

The new Ford administration building which is being erected at the Fordson plant is nearing completion. It is the plan of Henry Ford to centralize all of his executive offices in this new structure and this also will probably mean the removal of many executives from the Highland Park offices to the new location.

While the industry appears to have some pretty good ideas about the details of the new car, nevertheless interest in the Ford is not diminished and when Henry Ford finally decides to remove the veil of mystery which has shrouded his new creation for past months, there is bound to be a big audience on hand.

## Men of the Industry and What They Are Doing

### Roberts Heads Division of Milwaukee Trade Board

Chester J. Roberts, formerly associated with the A. O. Smith Corp. and the Nash Motors Co., Milwaukee works, has been appointed manager of the newly created industrial division of the Milwaukee Association of Commerce. The function of the new division is to furnish the maximum of service to industries now situated in Milwaukee and to direct the association's efforts in obtaining for Milwaukee factories now located elsewhere. Mr. Roberts is a native of Milwaukee, a graduate of Lawrence College and a post-graduate of the University of Wisconsin and the University of Illinois. His new duties are of a full-time character, and are being introduced by an extensive tour of American automotive and general manufacturing centers.

### Saxon Forms New Company

The Saxon Die & Stamping Co. has been formed in Toledo by Herman Saxon, founder of the former Saxon Mfg. Co., now merged with Electric Auto Lite Co. It will take over the Rollaway company, makers of motorcycle equipment, and operate the plant manufacturing dies, tools, stampings and machine parts. Mr. Saxon left Toledo five years ago to manage the asbestos business of the Soviet Government in Russia. In his new firm his son David Saxon will be associated.

### Munson on Far East Trip

C. H. Munson, export manager of North East Service, Inc., will sail this week from Seattle for an extensive trip to the Far East to increase North East sales and service facilities in the territory. He will visit Hawaii, Japan, the Philippines, Australia, New Zealand, India, Ceylon, Burma, Dutch East Indies and the Straits Settlements.

### Crosby Company Elects

At the annual meeting of the board of directors of the Crosby Co., Buffalo, Edward S. Gram was elected vice-president; John M. Smith, treasurer, and Henry W. Crosby, assistant treasurer. A new building was authorized to take care of additional business.

### Kerby Shows Durant Plant

A large number of members of the Toronto Rotary Club recently accepted the invitation extended by Roy Kerby, general manager of Durant Motors of Canada, Ltd., to be guests of the company and take a trip through the Leaside plant.

### Rengers Now Vice-President

F. H. Rengers, who recently returned to Moon Motor Car Co. as general sales manager, has been elected a vice-president and member of the board of directors.



**F. M. Young**

*President of the newly organized  
Young Radiator Co., Racine*

### Name Ship for Falk

Herman Falk, president of the Falk Corp., Milwaukee, steel founder and manufacturer of Diesel type engines, herringbone gear systems, etc., has been honored by the Bethlehem Ship Co., which has given his name to the oil tank steamer formerly known as Tuxpan Oil. The tribute is in recognition of the merit of the new Falk geared Diesel marine oil engine built by the Milwaukee company and just installed in the ship.

### Carney Goes to Rochester

C. H. Carney, for the past 12 years connected with the Velie factory, has been appointed service manager of Shewman & Kreppeneck, Velie distributors in Rochester, N. Y.

### Bonham Joins Distributor

J. H. Bonham, several years special factory representative of the Nash Motors Co., has been made general manager of the wholesale department of Southwest Nash Co., St. Louis.

### Freeland Joins Federal

H. D. Freeland has resigned as manager of the metallurgical department of Bower Roller Bearing Co., Detroit, to become chief metallurgist of the Federal Bearings Co., Inc., Poughkeepsie, N. Y.

### Connecticut Names Vaughn

Carl E. Vaughn has been appointed sales representative of the Connecticut Automotive Specialties Co., Bridgeport, in the middle western territory. He will have headquarters in Chicago.

### United Chromium Formed to Advance Process Use

WILMINGTON, DEL., Aug. 27—Certificate of incorporation of United Chromium, Inc., was filed here this week. The corporation is formed for developing to the fullest extent the practical application of chromium plating and of making known to American industry its many definitely established uses and advantages. The new corporation will have two licensing agencies, the Chromium Corp. of America, 130 Broadway, New York, and General Chromium Corp., 3220 Bellevue Ave., Detroit.

Processes covered by patent right owned or controlled by United Chromium, Inc., are the result of research and development by the Union Carbide & Carbon Research Laboratories, Inc., and the laboratories of the Chromium Corp. of America and its predecessors. These processes were originally owned or controlled by the Chromium Corp. of America, Electro Metallurgical Co. and General Chromium Corp.

Directors of the new corporation are: Andrew E. Baldwin, General Chromium Corp.; Fred J. Fisher, General Motors Corp.; F. H. Hirschland, Chromium Corp. of America; Benjamin O'Shea, Union Carbide & Carbon Corp., Hubert E. Rogers, F. S. Wheeler, American Can Co.; F. M. Bucket, Union Carbide & Carbon Research Laboratories, Inc.; C. Roy Gleason, W. F. Barrett, vice-president, Union Carbide & Carbon Corp.; John T. Pratt and R. C. Stanley, president, International Nickel Co.

### Champion Wins Verdict

TOLEDO, Aug. 30—Suits filed by the Champion Spark Plug Co. against a group of Japanese spark plug manufacturers and dealers for misrepresentation and fraud in the use of its trade name, have been settled by agreement. The action was taken under the international convention regarding unfair competition. As part of the agreement the offending parties made public apology in newspapers and deposited 10,000 yen in cash to be held against their future good behavior.

### Battery Speakers Named

NEW YORK, Aug. 30—A partial list of speakers who will be heard at the Niagara Falls meeting of the National Battery Manufacturers Association has been released by the association. Among the speakers are Walter R. Ingalls, New York consulting engineer and an authority on zinc metallurgy; M. D. Graham, manager of the service parts division of the Greater Market Development of the Automotive Equipment Association; W. C. Brooks and Bert Reid of USL Battery Corp.



## Bertram G. Work Dies While Abroad

Goodrich President for Past  
Twenty Years—Was Vac-  
ationing in Switzerland

AKRON, Aug. 30—Word has been received by the B. F. Goodrich Tire & Rubber Co. of the death yesterday of its president, Bertram G. Work, in St. Moritz, Switzerland. Death was due to a sudden attack of paralysis of the heart. Mr. Work had suffered from heart trouble for some time and went abroad about a month ago to rest.

Mr. Work was born in 1868, the son of Alanson Work, one of the original incorporators of the Goodrich company. He was graduated from Williston Seminary and spent a year at the Sheffield Scientific School, Yale. He left Yale on the death of his father and entered Goodrich employ as a clerk. In 18 months he was made general superintendent and later was made vice-president.

On the death of Col. G. W. Perkins he was elected to the presidency in 1907. He had served Goodrich 40 years, 20 of them as president.

One of his first achievements as president was to consolidate with the Diamond Rubber Co. His early administration was also marked by the entrance of his company into the international field. He was an expert on crude rubber and served as chairman of the rubber division of the War Service Committee. He was a trustee of the Equitable Trust Co., a director of the E. W. Bliss Co., Continental Coachouc & Guttapercha Co., Hanover, Germany; the Marta Mills, Inc., Thomaston, Ga., and American Anode, Inc.

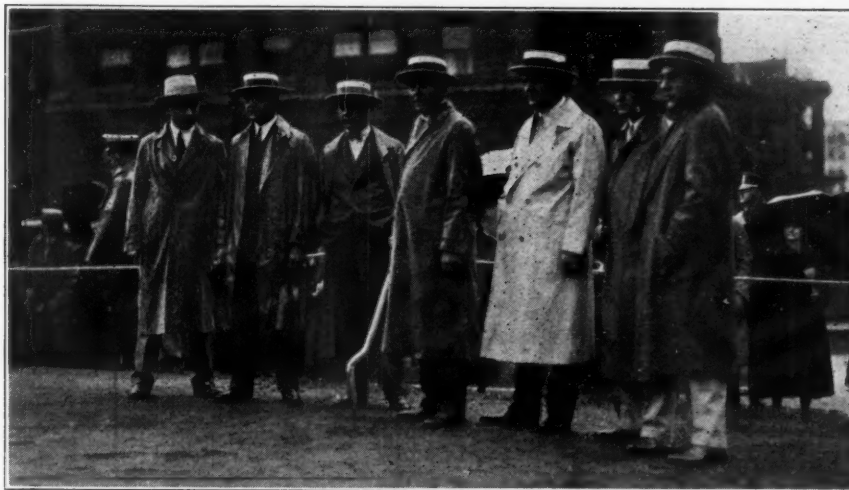
He was associated with Coburn Haskell in the invention of a golf ball that has had a revolutionary effect on the development of the modern ball.

Surviving are a son, Bertram Work, two brothers and two sisters. His wife died in 1923.

## Machine Tool Congress Organized in Cleveland

CLEVELAND, Aug. 30—A forum for men interested in machine tools is being organized under the name of Machine Tool Congress and will hold its first meeting at Cleveland, Sept. 19 to 22. The leading topic at the meeting will be "Various Phases of Standardization of Machine Tools." Discussions under this head will be led by Dr. P. G. Agnew, secretary of the American Engineering Standards Committee; James E. Gleason, president of the National Machine Tool Builders Association, and Sol A. Einstein, chief engineer of the Cincinnati Milling Machine Co.

Other sessions of the congress will be of round table character with discussions of specific items concerning machine tools which would be proper subjects for standardization. Reduced



Fisher Brothers at Ground Breaking Ceremony

The seven Fisher Brothers of Detroit, from left to right: Alfred J., Lawrence P., Charles T., Fred J., William A., Howard A., and Edward F., just before Fred J. turned the first sod for the new \$30,000,000 Fisher Building on Grand Boulevard, Detroit

rates on the certificate plan have been offered by railroads to those attending the congress. Ernest F. DuBrol, general manager of the National Machine Tool Builders Association, is temporary secretary of the congress.

## James E. Smith Dies; Saved Ford \$36,000,000

DETROIT, Aug. 30—James E. Smith, who saved \$36,000,000 for Ford Motor Co. in four years, according to Henry Ford's autobiography, died yesterday at the Northville Sanitarium, after a long illness. Funeral services were to be held this week at Chicopee, Mass., where Mr. Smith was born 32 years ago.

About five years ago Mr. Smith discovered a method of hardening steel, using electrical furnaces instead of gas furnaces, which led to the large Ford saving. At the age of 21 he was one of 15 Ford engineers sent to France to study the manufacture of airplane engines. Later he served on the government's advisory board on the manufacture of airplane engines and still later entered the air service in a technical capacity.

## Alexander to Make Large Plane

DENVER, Aug. 29—Alexander Airways, Inc. announce the adoption of plans for a seven-passenger enclosed plane, and will commence production at once. The present two-passenger, open biplane known as the Eaglerock is selling ahead of production, in spite of the fact that the factory is building slightly faster than one each day.

## Czecho Tractor Duty Cut

WASHINGTON, Sept. 1—Import duties on tractors and motor plows imported into Czechoslovakia have been reduced 30 per cent, according to cable to the Department of Commerce from its Prague office.

## American Motorists Perfect Organization

WASHINGTON, Sept. 1—The organization of a new national motor organization was perfected here this week when the American Motorist Association was formally chartered, with an initial membership of 75 independent clubs, having a car membership of 225,000 car owners.

J. Borton Weeks, president of the Keystone Motor Club of Philadelphia, was elected president. Other officers elected were William A. Thibodeau, Boston, first vice-president; Si Mayer, Chicago, second; John P. Hartman, Seattle, third; Daniel McEnerney, New York, fourth, and Charles H. Roth, Pittsburgh, fifth vice-president; Joseph H. Cox, New York, treasurer; Lin S. Hoopes, Wilmington, secretary, and Raymond Beck of Washington, general manager.

## Stunt Flying is Banned by U. S. Department Heads

WASHINGTON, Sept. 2—Stunt flying and ocean hops are to become passe so far as the War, Navy and Commerce Departments of the government are concerned, the heads of these three branches of the government have announced.

Disastrous events such as the Dole flight, in the opinion of Secretaries Davis and Hoover, do more to harm the cause of aviation than to advance it, they jointly declared this week, in an appeal, also voiced by the National Aeronautic Association, to discontinue such attempts. The Department of Commerce is being deluged with protests over the loss of lives and it is felt that a continuance of stunting will dispel confidence in aviation which on the whole is considered safe.

## Kansas City Finds Wrecking a Success

Dealers Stock Scrap for Favorable Market—Many Cities Seek Plan Details

KANSAS CITY, Aug. 29—The experiment of Kansas City motor car dealers with a dealer-owned automobile wrecking company, is proving more successful than even the most optimistic dealers predicted.

While the junk market now is slow, Tom Shugrue, manager of the wrecking company, and the officers of the company expect it to get better in the fall. By the time the market is "ripe" the company will be ready to ship on a big basis. The present wrecking capacity of the plant is 15 cars a day. Switching facilities have been installed for shipping in carload lots direct from the plant.

George A. Bond, who is secretary of both the dealer organization and the wrecking company, said his office is being flooded with requests from all parts of the United States and Canada for details of the plan and how it is working out. Mr. Shugrue also has received many requests for information on the plan, large motor car manufacturing concerns asking for the most minute details. The officers of the company are highly pleased with the plan and believe it has solved one of their biggest problems.

## Olds August Production Seen Setting New Record

LANSING, Aug. 29—July Oldsmobile sales set a new record for that month, the company announced, declaring that retail sales exceeded factory production. With conditions existing this month, a new August record is expected.

The number of Oldsmobiles in dealers' hands has remained at a low level during the past two months and while production has been increased retail sales have absorbed the supply of cars as rapidly as they have been received by the dealers. Retail sales for July showed a gain of 16 per cent compared with the same month last year. During August the factory has been working to capacity, producing more than 300 cars daily.

## Berliner Gets New Plant

ALEXANDRIA, VA., Sept. 1—The erection of an aircraft plant, to manufacture 300 planes a year, will begin here at once. The Berliner Aircraft Co., which for the past two years has operated on a small scale at College Park, Md., has leased the Blake-Palm Elevator plant on the water front and is already moving its equipment here. Henry A. Berliner, president of the Potomac Flying Service in the District of Columbia, is the financial backer of the new concern which will specialize in government contracts.

## Seven Million Spend Vacations on Tours

WASHINGTON, Sept. 2—More than 7,000,000 people in the United States devoted vacations this summer to automobile tours, the American Automobile Association estimates in a tabulation of tourist services rendered by affiliated clubs throughout the country. Up to Aug. 15, 2,619,000 cars were registered at tourist bureaus. The average travel range of the vacationing autoists has been stretched from a 300 miles radius in 1920 to almost 700 miles this year, due to highway development and improvement of automobiles.

## Nash Wholesale Men Study Car Building

MILWAUKEE, Aug. 29—Traveling sales representatives of Nash Motors Co. distributors spent the past week in inspecting the various Nash plants and affiliated industries, to become thoroughly familiar with manufacturing processes and hear merchandising talks. In welcoming the representatives, Charles W. Nash, president, said:

"There is no question that the well-informed salesman, the man who knows his product thoroughly and who knows intimately just how the maker of that product conducts his business, is at a distinct advantage over the fellow who hasn't had the opportunity to secure this information. It was with this thought in mind that we have called you into the factory so that you may go through our plants and see for yourselves how carefully the Nash car is made.

"You will notice on your tours of inspection how each department and each plant is coordinated, you will note the complete harmony that exists between the various departments and between the organizations of the different plants. You will observe the care that is taken in manufacturing, and I think you will be impressed by the inspections that are made of each operation and of each finished part."

This was the first time that a special convention of field men in the sales department has been held apart from the periodical meetings of representatives in general, and the conference will be repeated.

## Denver Out of Model T

DENVER, Aug. 27—Ford dealers in this territory state that they have about completed unloading the new Model T's and that they all have any number of sight unseen orders for the new cars when they arrive. Country dealers have concentrated on sale of Fordsons.

## Bay State Insurance Raked by Protests

General Dissatisfaction Over Eight Months' Operation Shown at Hearing

BOSTON, Aug. 27—Judging by the big throng which attended the hearing this week, and the protests lodged, Insurance Commissioner Wesley E. Monk will make some changes in the compulsory insurance law when the new rates go into effect on Jan. 1 next. If this is not done there probably will be some changes made in the laws by the legislature even if they do not go into effect until later.

Attorney Thomas F. Quinn, representing more than 200 taxicab owners in Boston and vicinity quoted figures to show the small number of accidents in which his clients had been involved since the law went into effect on Jan. 1 last.

"A high insurance rate means the ruination of the taxicab business," he said, "for the public will not pay any higher mileage rate." He urged that instead of a minimum rate, a maximum rate be established.

Representative Thomas N. Ashton, of Fall River, a member of the present legislature was the most outspoken opponent.

"At no time during the passage of the compulsory insurance law in its several stages through the General Court was there any such monstrosity contemplated as we have had since the law went into effect," Representative Ashton said. "In fact the utter inconsistency of the present schedule is so marked that I cannot conceive how anyone could dare apply it."

## Taxicab Operators File Views

Attorney Chester C. Steadman, for the Independent Taxicab Operators Association, said the burden of establishing the fairness of the present rates should rest properly upon the insurance companies. Harry Wiseman, representing a group of independent taxicab owners, said that a maximum rate of \$200 would be very favorable. Also in territory No. 1 the rate should not be more than one cent a mile. William F. Connor of Boston, said the insurance companies should not pay commissions to brokers, and Harry H. Stevens, president of the insurance brokers in this state, replied that the brokers were not getting rich.

Commissioner Monk then quoted some figures for the first five months of this year showing that there was a loss ratio for insurance companies of 74 per cent in territory No. 1; 54 per cent in territory No. 2, and 34 per cent in territory No. 3. When the hearing finished the commissioner did not state whether he would have any further hearings. As the truck operators were not heard this time they may get a hearing at a later date.



## Exports, Imports and Reimports of the Automotive Industry for July of Current Year and Total for Seven Months Ending July, 1927

	Month of July 1926		Month of July 1927		Seven Months Ending July 1926		Seven Months Ending July 1927	
	Number	Value	Number	Value	Number	Value	Number	Value
Automobiles, parts and accessories .....	11	\$24,248,645	13	\$30,210,100	42	\$196,922,213	69	\$242,293,195
Electric trucks and passenger cars .....	5,410	21,368	9,206	51,774	40,463	78,034	63,954	131,909
Motor trucks and buses (total) .....	4,342	3,859,251	7,327	6,167,982	32,159	28,216,908	53,053	40,730,166
Up to one ton, inclusive .....	901	2,129,640	1,579	3,558,727	6,986	14,941,439	9,462	24,529,784
Over 1 and up to 2 1/2 tons .....	167	1,199,765	300	1,748,467	1,318	9,167,979	1,439	11,974,795
Over 2 1/2 tons .....		529,846		860,788		4,107,490		4,225,587
<b>PASSENGER CARS</b>								
Passenger cars, except electric (total) .....	17,084	12,008,285	19,398	13,872,553	143,511	105,287,624	179,174	131,020,243
Value up to \$500, inclusive .....	7,894	3,115,986	3,213	1,187,036	59,330	22,560,368	44,387	16,466,065
Value over \$500 up to \$800 .....	4,840	3,286,005	7,301	3,561,705	40,207	27,429,039	61,677	35,099,132
Value over \$800 up to \$1,200 .....	3,244	3,406,212	5,941	4,812,717	33,592	35,442,007	48,768	42,492,482
Value over \$1,200 up to \$2,000 .....	726	1,145,177	2,314	2,804,962	7,084	10,838,673	18,868	23,656,583
Value over \$2,000 .....	380	1,054,905	629	1,506,133	3,298	9,017,537	5,474	13,305,981
<b>PARTS</b>								
Parts, except engines and tires .....	..	..	..	..	..	..	..	..
Automobile unit assemblies .....	..	3,190,641	..	3,079,138	..	27,224,809	..	29,231,747
Automobile parts for replacement .....	..	3,499,388	..	5,542,647	..	21,168,340	..	28,156,847
Automobile accessories .....	..	837,079	..	658,906	..	5,874,582	..	5,049,461
Automobile service appliances (n. e. s.) .....	..	632,797	..	692,068	..	4,225,317	..	4,946,454
Station and warehouse motor trucks .....	12	20,162	12	18,428	107	111,699	185	124,518
Trailers .....	83	34,013	35	22,241	676	247,792	500	223,586
Airplanes, seaplanes and other aircraft .....	1	3,000	1	11,534	27	126,941	20	323,144
Parts of airplanes, except engines and tires .....	..	4,644	..	30,973	..	103,356	..	220,151
<b>BICYCLES, ETC.</b>								
Bicycles and tricycles .....	581	20,259	648	16,012	3,440	103,001	2,858	79,706
Motorcycles .....	791	168,163	676	149,107	14,276	3,086,574	11,765	2,625,625
Parts and accessories, except tires .....	..	200,651	..	87,299	..	1,088,045	..	776,034
<b>INTERNAL COMBUSTION ENGINES</b>								
Stationary and Portable								
Diesel and Semi-Diesel .....	101	227,914	101	117,370	535	908,691	493	831,092
Other stationary and portable:								
Not over 10 Hp. .....	3,065	413,129	2,115	254,918	18,499	1,776,250	15,880	1,434,848
Over 10 Hp. .....	219	450,021	312	237,067	1,173	1,384,466	1,090	990,118
Automobile engines for:								
Motor trucks and buses .....	74	26,872	357	49,763	1,959	290,078	3,765	451,610
Passenger cars .....	7,408	805,761	5,849	787,337	91,518	8,781,838	71,757	7,521,212
Tractors .....	186	96,134	74	16,221	990	542,248	878	382,364
Aircraft .....	5	38,950	19	148,767	259	467,356	42	272,459
Engine accessories and parts .....	..	369,023	..	276,982	..	2,619,510	..	2,269,000
<b>IMPORTS</b>								
Automobiles, including chassis (dutiable)...	57	106,752	54	82,978	393	716,400	335	630,985
Other vehicles and parts for them (dutiable) .....	..	18,083	..	28,216	..	71,924	..	122,627
<b>REIMPORTS</b>								
Automobiles (free from duty) .....	9	10,779	19	24,848	95	130,628	115	175,619

## July Exports Gain 25% Over Last Year

WASHINGTON, Sept. 1—Automotive exports from the United States during July totaled \$31,950,356, or a gain of 25 per cent over the exports in July, 1926, according to export figures just announced by the Department of Commerce. The July gain over June of this year was 4.2 per cent. The ratio of exports to production was 10.9 per cent.

The average value of passenger cars dropped to \$715 as compared with \$771 in June, while average value of truck units advanced slightly from \$656 during June to \$659 in July.

The total number of passenger car units shipped in July of this year amounted to 19,396, a slight decline from the figures for June but an increase of 2314 over those of July, 1926. Exports of truck units in July amounted to 9206 which was an increase of 36 per cent over the June shipments and 70.2 per cent over the July exports of last year.

### Employees Form Association

OSHAWA, ONT., Aug. 29—Employees in the plant and offices of General Motors of Canada, Ltd., have formed, with the approval of the management, an employees' association to control activities, such as athletics, dramatics and outings. It provides a body through which grievances can be brought to the attention of the management; and the funds of the association provide relief

in needy cases, temporary loans to those financially embarrassed, and other helpful assistance.

## Greater Attention Urged for A.E.A. Foreign Buyers

CHICAGO, Aug. 29—An appeal to prospective exhibitors at the Automotive Equipment Association Show, Nov. 7-12, to show more attention to the foreign visitors has been sent out by E. C. Guthard, chairman of the foreign trade committee of the A. E. A. Mr. Guthard said last year there was criticism because export managers were oftentimes hard to find.

"The foreign visitors anticipate more attention from the manufacturer than does the ordinary American jobber," said Mr. Guthard. "They travel great distances to be present on these occasions and they expect to be greeted with courtesy and to obtain full information about each product in which they are interested without having to hunt all over the show to find the export manager or someone else able to supply this information."

Mr. Guthard announced that the Universal Catalog "D" will be ready for distribution to the trade Nov. 1.

## Oldest Dealer Dies

WARSAW, N. Y., Aug. 27—Samuel J. Crawford, 73, veteran motor dealer of this town, died this week after a brief illness. Several months ago the Studebaker Corp. honored Mr. Crawford as the oldest Studebaker dealer in the United States.

## G.M.C. to Develop Iron Casting Plant

DETROIT, Aug. 29—General Motors Corp. contemplates the use of lake boats to its iron casting plant on the outskirts of Saginaw, it was revealed at the meeting of the Michigan State Administrative Board, yesterday, when the highway committee of the board was authorized to divert the river road in Saginaw for 6000 ft. so that it will circle the plant and not interfere with the river harbor.

A representative of General Motors who appeared before the board said that the iron plant is to be expanded and that water shipments will make enlarged industrial activities possible. It is understood that pig iron will be shipped to the Saginaw plant from lower lake ports. It was also stated that a Federal appropriation for clearing the Saginaw river has been granted.

## Plane Shops at Cleveland

CLEVELAND, Aug. 27—Airplane engine maintenance shops and the eastern division superintendent's office of National Air Transport, Inc., will be established here when the company takes over the New York-Cleveland-Chicago air mail from the government on Sept. 1. Col. Paul Henderson, general manager of the company, has announced. Wesley L. Smith of Cleveland, senior air mail pilot, has been named superintendent of the Cleveland-New York division.

## Steel Makers Lay Slow Sales to Ford

### Believe New Model Appearance Will Clear Much of Hand-to-Mouth Buying

NEW YORK, Sept. 1—Amid a continuance of widespread but decidedly small lot buying by automotive consumers, the steel market is hopefully waiting for the development of tonnage demand. In some quarters a decisive change is looked for when covering of fourth quarter requirements must come in for attention. The more conservative opinion leans to the expectation that demand will expand slowly and that the market has turned the corner.

If, as is generally conceded by observers of the automobile situation, there is a large volume of passenger car demand overhanging the market as the result of prospective buyers holding off until the new Ford model has made its appearance, then, so the argument of those in the steel market runs, it may be safely concluded that there is also a very considerable amount of steel tonnage to be bought by automotive consumers.

That this development will be spread over a considerable period, however, is the predominant opinion and although 1927 has still four more months to run, it is generally put down as an off-year in the steel industry. By the same token, the long-range view is that 1928 will inherit considerable of this latent demand from its predecessor, and therefore, next year promises to make up to a considerable extent for this year's shortcomings.

The price situation remains entirely unchanged. Cold-rolled strip-steel, for which automotive specialty demand has perhaps been slightly better during the closing days of August than for any other description of steel, rules very firm at 3.25 cents base, Pittsburgh or Cleveland, and, while some mills have had inquiries for fourth quarter business, there is not the slightest inclination on the part of sellers to expedite this business by price concessions.

**Pig Iron**—Automotive foundries show little interest in the market, which is easy and quiet. Merchant furnace interests intimate that prevailing prices will not prove acceptable to them after they have disposed of their holdings. They assert that they would have let their furnaces go out of blast long ago in a \$17.50 foundry iron market (Valley), had it not been that they wanted to work up accumulations of ore.

**Aluminum**—Demand for metal for light automotive alloy parts is reported to be on the uptrend. Importers look for broader demand after Labor Day from consumers who are known to have made no provision for their fourth quarter requirements. Secondary metal interests are not forcing sales, and this accounts for a fairly steady market.

**Copper**—Producers are striving to sta-

bilize the market by eliminating holdings in second hands and by refraining from selling to resellers. The market generally is marking time. Demand from lighting, starting and ignition equipment makers is on the uptrend.

**Tin**—Consumers show little buying interest. The statistical position is in holders' favor but speculative maneuvers in London obscure the outlook.

**Lead**—Continuing dullness makes for an easy tone in the lead market, but producers look upon this condition as a passing phase, as metal is being used up at a good rate.

**Zinc**—Slight declines have induced moderate buying by consumers.

## Industry Increases Hardwood Buying

ATLANTA, Aug. 30—The Atlanta lumber market in the week of Aug. 22 witnessed a further steady improvement in the demand for hardwoods from the automotive field. It was the largest sales week in several months, and brought August sales in excess of sales for that month last year.

The primary reason for the increased volume has been a tendency to place orders for advance needs, delivery for the most part being asked during September as the present takings are for the needs of the industry the last quarter of the year. Sales have been particularly active in the truck and commercial body fields, but are also larger than at this time last year to car manufacturers who have announced new models.

For the week of Aug. 22 prices for the best grade of white ash in the larger dimensions, which the automotive industry buys, were considerably less than they were earlier in the month, averaging a decline of \$10 to \$15. There is a good demand also for the best grade of maple in the larger dimensions, but these prices are comparatively stable.

## Cotton Fabric Factories Operating at Capacity

ATLANTA, Aug. 31—Information from the Georgia Cotton Manufacturers Association is to the effect that virtually all of the plants in this district engaged in the manufacture of automobile tire fabric have been producing on an almost capacity basis for several weeks. For the most part they are sold far enough ahead to assure that production will continue at capacity for an indefinite period, while some of the larger plants are finding it necessary to operate on both day and night basis to keep up with new orders.

### Holden's to Increase Capital

WASHINGTON, Sept. 1—The automotive division of the Department of Commerce is advised that Holden's Motor Body Builders, Ltd., the largest automobile body building concern in Australia, will increase its capital from £1,000,000 to £1,500,000. The increase is necessary, it is stated, to enable the company to take care of the rapidly increasing activities.

## Financial Notes

**Reynolds Spring Co.**, for the quarter ended June 30, 1927, reports net loss of \$31,769 after depreciation, interest, etc., comparing with net profit of \$6,193 in the preceding quarter and a net loss of \$21,650 in the second quarter of 1926. Net loss for the first six months of 1927 totaled \$25,576 after above charges, against a net loss of \$39,308 in the first half of the previous year.

**Wilcox Products Corp.**, reports net profits of \$31,974 before taxes for July. Net before taxes for the first seven months aggregated \$253,137, or at an annual rate of \$5.83 per share on the class B stock after taxes, interest and the yearly dividend of \$2.50 on the class A stock. Net sales for the seven months showed an increase of 23 per cent over the same period a year ago.

**Kemsley, Milbourn & Co., Ltd.**, an English acceptance corporation which engages in the financing of a number of important American motor cars, is offering, through J. A. Sisto & Co., \$1,000,000 of 6 per cent sinking fund debentures priced at 99½ and interest. Gross business of the firm amounted to \$27,817,134 in 1926 and proceeds from the sale of the issue will be used as additional working capital.

**Industrial Finance Corp.** has declared a dividend of 25 per cent in common stock on its common shares. A dividend of \$37.50 has also been declared on the 6 per cent preferred stock, clearing up accumulated dividends on this issue.

**Pierce-Arrow Motor Car Co.** directors this week voted to suspend the company's preferred dividend. A statement by Myron T. Forbes, president, says there has been a reduction in demand for heavy duty trucks which has thrown an extra burden of overhead on the car business which is reflected in current earnings.

## War Department Names Plane Design Winners

WASHINGTON, Sept. 1—Winners in the War Department's competition in airplane designs for a type suitable for the National Guard squadrons were announced this week. The Douglas Airplane Co. of Santa Monica, Cal., the Keystone Aircraft Co., Bristol, Pa., and the Curtiss Aeroplane & Motor Co., Inc., of Garden City, Long Island, N. Y., were announced the winners. The new planes will be light-powered two-seaters of an "all-purpose" type. The motive power will be Wright Whirlwind engine.

### Gardner Profit \$138,739

ST. LOUIS, Aug. 29—A profit of approximately 90 cents a share on outstanding common stock, after all charges and allowance for depreciation, is reported by Gardner Motor Co., Inc., for the quarter ending June 30. The total profit was \$138,739.

"Replacement demand for the next 12 months should be at least 50 per cent greater than during the last year," said Russell E. Gardner, president.



## Strong Car Market for Balance of Year

Automotive Sales Increasing  
as Large Grain and Fruit  
Crops Are Harvested

(Continued from page 329)

those rebuilt with dealer's guarantee. Trucks are moving better than last month and about 20 per cent better than a year ago. General business conditions are only fair, with increase in repossession estimated at about 10 per cent over those of July. New models, price reductions and continued summer weather are held responsible for better sales.

### LOS ANGELES

August sales of southern California are expected to fall slightly under August of last year and about parallel with July. Total registration figures do not reflect actual market strength, as inability to make deliveries on new models has caused substantial amount of unfilled orders. New stocks are generally low.

Used stocks on hand show considerable increase. Business conditions moderately good. Marked betterment reported in truck market with prospects continued for increasing demand after unusually slow period. Used truck stocks, however, still heavy.

### SEATTLE

New car sales for Seattle and western Washington districts for the first seven months of this year were 17 per cent less than for the same period of 1926. During the last few days there has been a pick-up in the business, due to greater public interest over the new cars which are arriving, and the fact that August 1 is the date on which people can avail themselves of the half year fee on new licenses.

The brightest spot in the outlook in the Pacific Northwest is the splendid wheat crop, which will run 110,000,000 bushels and will net the farmers \$30,000,000 more than last year. The apple producers of the Pacific Northwest will probably get from \$15,000,000 to \$20,000,000 more for their crop than a year ago. The demand from agricultural sections for new cars is excellent and the light truck business is also satisfactory there, although on the west side of the Cascades truck sales have not been up to expectations, due to the seasonal slow-down of the lumber industry.

Credit conditions are good, and the accessory business has not shown the comparative loss of car sales. Some dealers report the used car market is heavy and stocks of used cars are probably in excess of what they were a year ago. Dealers for the next five months will plan their business along conservative lines.

### NEW YORK

Persistent rains have not been encouraging to the sale of motor cars in the New York territory this month, but despite this fact, there is a possibility that the full month's figures will show a slight gain over the same period a year ago and close to the July level this year. Actual sales for the first two weeks of the month, as reported by Sherlock and Arnold, were 6776 cars against 5119 in the first two weeks of August, 1926, and comparing with 14,044 in the entire month of July, 1927.

Used cars have been selling in fair volume and distributors' and dealers' stocks in the metropolitan area are in good condition, but prices are too low for comfort.

## Sporting Goods House Will Sell Airplanes

BOSTON, Aug. 29—The Iver Johnson Co., one of the oldest sporting goods houses in the country, announces through its manager, D. B. Harvey, that it will market airplanes from now on. He says it has become as much a sport as yachting, motoring and other outdoor events so that it is time to sell the goods that will be in as much demand shortly as the company's other stocks.

Business conditions are good, but the sale of trucks in both the light and heavy duty fields have been disappointing. A variable outlook is presented by the parts and accessories industries. Seasonal influences are expected to lower the volume of shop equipment and replacement parts shipments in September, while the accessory market may remain fairly stable at the recent rather low levels.

### CHICAGO

Retail sales of automobiles in the Chicago trade territory, as a whole, staged a material comeback in August. All dealers who displayed new models, and these were in the majority, showed increases of from 25 to 50 per cent over July. It is estimated sales were approximately equivalent to last August. Resistance is felt in the trade as a result of the forthcoming announcement of the new Ford. Used car sales showed a very material gain over both July of this year and August of last, and used Fords are becoming increasingly difficult to buy.

## July Philadelphia Sales Show Increases Over 1926

PHILADELPHIA, Aug. 29—Retail sales of passenger cars in July in the Philadelphia Federal Reserve district were appreciably above those of July, 1926, wholesale distribution showing a gain of 70 per cent in number and 55 per cent in value. Sales of less expensive cars decreased as against June this year, but increased in other classes.

Stocks of new cars at the end of July were greatly in excess of those on the same date last year, except in the more expensive cars, which were lower. Inventories of used cars also were heavier than a year ago.

## Electric Truck Sales Gain

NEW YORK, Aug. 29—Electric street truck sales increased 10 per cent during the first half of 1927 as compared with the same period of 1926. The dairy industry bought 68 per cent of the total electric truck sales in the first half this year, these replacing horse-drawn vehicles for the most part.

Sales in fleet lots rather than single units continues to be indicated, according to the Society for Electrical Development.

## G.M. Makes Plans for Stock Exchange

Action Waits Sanction By  
Stockholders—Current Assets Rise \$34,500,000

NEW YORK, Aug. 29—General Motors Corp. has issued a complete report for the six months ended June 30, 1927, showing net income after depreciation, Federal taxes, etc., totaling \$129,250,207, the same as shown in the preliminary statement. This is equivalent, after deducting preferred and debenture dividends to \$14.35 a share earned on 8,700,000 shares of no par common stock.

Current assets on June 30, 1927, including cash and marketable securities of \$153,608,477, were \$404,694,975 and current liabilities were \$159,487,162, leaving net working capital of \$245,207,813. This compares with current assets of \$370,148,432, current liabilities of \$125,817,380 and working capital of \$244,331,052 on June 30, 1926.

The corporation has advised the New York Stock Exchange that if the amendment to its charter is adopted by stockholders on Sept. 12, and application to list the resulting new stock is approved by the governing committee of the exchange on Sept. 14, notices will be sent to stockholders on the night of Sept. 14 advising them that exchanges for new stock can be made Sept. 15, and that General Motors Corp. will have on hand at all times thereafter a sufficient number of certificates to meet demands for transfer.

## Eight Small Companies Show Gains, Says Velie

MOLINE, Aug. 29—Retail sales by small automobile companies early in 1927 show a decided increase over sales of the corresponding period a year ago, according to W. L. Velie, president of the Velie Motors Corp. "It is interesting to note this fact," said Mr. Velie, "because of the current opinion that the smaller companies are being forced into consolidation by competition. Checking the sales of 10 of the best known small companies, I find that eight show a decided sales increase in 1927. The Velie, for example, gained 30 per cent in this period. Some of the large companies, not only the Ford, show losses in these months. It is hardly likely that the small companies will be out of the race for many years to come."

## G.M. to Develop Housing

FLINT, Aug. 29—General Motors Corp. has purchased more than 300 acres of land which it will develop for housing purposes for employees in its plant here. The new purchase is designed to provide home sites for employees in the new Fisher Body plant on the south side of the city. Several years ago the corporation built upwards of a thousand houses for its employees.

## N.A.D.A. Eliminates New York Banquet

CHICAGO, Aug. 27—The eleventh annual convention of the National Automobile Dealers Association will be held in Chicago at the Palmer House, Jan. 31 to Feb. 2, it is announced by C. A. Vane, general manager. For the last 10 years the N. A. D. A. has held its conventions at the Hotel LaSalle but it was decided this year to make use of the new Palmer House. The annual banquet will be held Feb. 1.

The fifth annual eastern district convention will be held at Hotel Commodore, New York, Jan. 9 and 10. The meeting will be for business, membership and matters and educational purposes only. There will be no dinner in connection with the New York meeting. Mr. Vane said that "show week in New York is always a full battle of 'banquets'; that there aren't enough nights in the week to arrange one for dealer affairs; that the casualties are heavy enough anyway."

## Falcon to Add Two Models

DETROIT, Aug. 29—Falcon Motors Corp. is soon to add two more speedster models. Initial shipments on the new jobs are now going forward to dealers. Forrest H. Akers, sales manager, reports that the offering of the Gray Ghost brought a demand in excess of expectations. New color combinations on the entire line of Falcon-Knight cars, have been a great stimulant to retail sales during July and August.

## Coming Feature Issues of Chilton Class Journal Publications

Sept. 15—Bus Show Issue—  
Operation & Maintenance.

Sept. 20—Bus Show Issue—  
Commercial Car Journal.

Oct. 1—Production and Fac-  
tory Equipment Issue—Au-  
tomotive Industries.

Nov. 10—Marketing Annual—  
Motor World Wholesale.

## Georgia Car Licenses Now Based on Weight

ATLANTA, Aug. 29—Changes in the method of licensing all forms of motor vehicles in Georgia are provided for in the new motor vehicle law. The new license rate is based upon the gross factory weight on all vehicles, the license charge for passenger cars being 50 cents for each 100 lb. or fraction thereof, with a minimum charge of \$11.25 as at present, and the license charge on trucks ranging from \$15 to \$1,125 on the largest sizes. Rates generally represent increases.

For the first time tractors not used exclusively in agricultural work, trailers, semi-trailers and motorcycle side-cars will be licensed.

The speed limit in the state has been increased to 40 m.p.h.

## Community Building for Milwaukee Trade

MILWAUKEE, Aug. 29—One of the most important automotive sales and service projects that has ever been developed in Milwaukee is that about to be undertaken by John T. Ellison and associates. Plans are being completed for the construction of an automotive community building involving an investment of fully \$1,000,000 and covering the square block bounded by Wisconsin Ave., Thirty-seventh to Thirty-eighth Sts.

Across the Wisconsin Ave. front will be erected a three-story building for automotive sales, with a full basement for service. The arrangement embraces accommodations for a number of dealers and spaces for equipment and accessory stores, tire stores, etc. There will be a private street front for parking of cars, as well as a private alley in the rear of the property.

The Milwaukee road is building side-tracks from its main line nearby, with a loading and unloading dock. This spur will not only serve the new building, but the numerous automotive businesses already existing in the immediate vicinity.

## Kingsley-Miller Moves

CHICAGO, Aug. 27—Kingsley-Miller Co. after Sept. 6 will consolidate offices and factory at 625 W. Jackson Blvd., Chicago. Additional factory space will permit equipment incidental to a much larger output.

# Calendar of Coming Events

## SHOWS

American Electric Railway Association, Public Auditorium, Cleveland...Oct. 1-7  
American Road Builders Association, Public Auditorium, Cleveland...Jan. 9-13  
Automotive Accessories Association, Armory, Chicago...Nov. 7-12  
Automotive Equipment Association, Coliseum, Chicago...Nov. 7-12  
Boston, Aviation and Radio Exposition...Sept. 26-Oct. 1  
\*Chicago, National Automobile Chamber of Commerce, Coliseum Jan. 28-Feb. 4  
International Aircraft Show, Berlin March 23-April 11  
Lille, France, Exposition...Nov. 20-Dec. 4  
London Passenger Car Show...Oct. 14-22  
London Truck Show...Nov. 17-26  
Machine Tool Exhibition, New Haven, Conn. Sept. 6-9  
Machine Tool Exposition, National Machine Tool Builders' Association, Public Auditorium, Cleveland Sept. 19-23  
National Air Races, Spokane, Wash. Sept. 23-24  
National Standard Parts Association, Convention Hall, Cleveland...Nov. 14-18  
National Steel and Machine Tool Exposition, American Society for Steel Treating, Convention Hall, Detroit, Sept. 19-23  
\*New York, National Automobile Chamber of Commerce, Grand Central Palace Jan. 7-14  
Paris, Grand Palais Oct. 6-16  
Salon, Automobile Salon, Inc., Hotel Drake, Chicago Jan. 28-Feb. 4  
Salon, Automobile Salon, Inc., Hotel Biltmore, Los Angeles...Feb. 11-18  
Salon, Automobile Salon, Inc., Hotel Commodore, New York...Nov. 27-Dec. 3

Salon, Automobile Salon, Inc., Hotel St. Francis, San Francisco Feb. 25-March 3  
United States Good Roads Show, Des Moines May 28-June 1

\*Will have special shop equipment exhibit.

## CONVENTIONS

American Chemical Society, Detroit, Sept. 6-8  
American Electric Railway Association, Public Auditorium, Cleveland...Oct. 3-7  
American Gear Manufacturers Association, Mt. Royal Hotel, Montreal Oct. 20-22  
American Institute of Mining & Metallurgical Engineering, Metals Division, Book-Cadillac Hotel, Detroit Sept. 19-23  
American Road Builders' Assn., Hotel Hollenden, Cleveland Jan. 9-13  
American Road Builders' Association, Banquet, Hollenden Hotel, Cleveland Jan. 11  
American Society of Mechanical Engineers, Machine Shop Practice, New Haven, Conn. Sept. 7-9  
American Society of Mechanical Engineers, First National Fuels Meeting, St. Louis Oct. 10-13  
American Society for Steel Treating, Convention Hall, Detroit...Sept. 19-23  
American Welding Society, Book-Cadillac Hotel, Detroit...Sept. 19-23  
Automotive Electric Association, Buckwood Inn, Delaware Water Gap, Pa. Sept. 12-14  
Automotive Equipment Association, Small Tool Meeting, Pike, N. H. Sept. 8-9  
Automotive Equipment Association, Coliseum, Chicago Nov. 7-12  
International Congress for Testing Materials, Amsterdam Sept. 12-17

Motor and Accessory Manufacturers Association, Credit, Detroit...Sept. 14-16  
National Association of Finance Companies, Congress Hotel, Chicago Nov. 14-15  
National Foreign Trade Council, Houston, Texas April 25-27  
National Hardware Association, Marlborough-Blenheim, Atlantic City Oct. 17-20  
National Safety Council, Stevens Hotel, Chicago Sept. 26-30  
National Standard Parts Association, Hotel Hollenden, Cleveland...Nov. 14-18  
National Tire Dealers' Association, Brown Hotel, Louisville, Ky. Nov. 15-17  
United States Good Roads and Bankhead National Highway Association, Des Moines...May 28-June 1  
World Motor Transport Congress, London Nov. 14-17

## S. A. E. National

Aberdeen Proving Ground, Oct. 6—Joint meeting with Army Ordnance Association.  
Chicago, October—National Transportation and Service Meeting.  
Chicago, Dec. 1—Tractor Meeting.  
Cleveland and Detroit, Sept. 19-22—Production Meeting.  
Detroit, Jan. 24-27—Annual Meeting.  
New York, Jan. 12—Annual Dinner.  
Spokane and Chicago, week of Sept. 19—Aeronautic meeting.

## Sectional

Milwaukee, Oct. 5—First Meeting.

## RACES

British Grand Prix, Brooklands...Oct. 1  
Charlotte, N. C. Sept. 19  
Detroit Sept. 10  
Salem, N. H. Oct. 12